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EXPLORATIONS IN MANAGERS' ATTITUDES
TO TIME:
RELATIONSHIP WITH LOCUS OF CONTROL

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EXPLORATIONS IN MANAGERS' ATTITUDES TO TIME: RELATIONSHIP
WITH LOCUS OF CONTROL

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The research is concerned with psychological time. It describes dimensions along which to measure attitude to time and relates these to locus of control. It seeks to indicate how attitude to time can be related to various strategies which managers may employ in managing their time.

An instrument for measuring attitude of time (Time Questionnaire) has been derived from a Wessman model by factor analysis. The resulting dimensions (being organised, present-rootedness, personal harassment, changeability and relaxed style) have been interpreted with the aid of semi-structured interviews with practising managers. Attitude profiles derived by cluster analysis allow managers to be classified into three broad groups.

Rotter's locus of control scale was selected for further testing because of its relevant theoretical base and its methodological appropriateness. Factor analysis was employed to challenge Rotter's contention that the scale is unidimensional. Two dimensions have been identified (general luck and political control) which show partial correlation with the Time Questionnaire dimensions. A method of identifying internals and externals by weighted scores on the two dimensions provides a more accurate description than the conventional method.

The two strands of the research were integrated in a study with managers of a large city council, based on the use of the Time Questionnaire and the locus of control scale. As part of the integrative study an additional instrument was developed to analyse strategies used for overcoming time management obstacles (Obstacles Questionnaire).

Finally, the research offers a Time Questionnaire which will help managers and other researchers to increase their understanding of attitude to time. It offers a two-dimensional view of locus of control with an improved method of scoring. It also offers an Obstacles Questionnaire which can be used to link attitudes to time to any future observation studies on time management.

AUTHOR DECLARATIONS

1. During the period of registered study in which this dissertation was prepared the author has not been registered for any other academic award or qualification.
2. The material included in this dissertation has not been submitted wholly or in part for any academic award or qualification other than that for which is is now submitted.

B.M. Austin

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Finally I should like to express my gratitude to my supervisors, Dr. Arthur Rothwell and Professor John Knibbs, for their stimulus and guidance. However, this dissertation remains my responsibility and I confirm that the empirical studies were conducted solely by me, as was the writing of the dissertation.

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CHAPTER ONE

INTRODUCTION

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1.1 STIMULUS FOR THE RESEARCH

Interest in time as a resource became awakened while the researcher was engaged in tutoring mature students of management, with particular reference to self-management. In the teaching mode the aims were to encourage students to increase their awareness of time and how they used it, to clarify the objectives they wished to pursue and to plan their time to ensure that the most important objectives were given highest priority. In the tutoring mode one received many requests for help in using time effectively because it seemed that there were so many obstacles in the way of successful planning of time use.

What became obvious was that the students, who were managers in their own right, not only perceived distinctly different obstacles in their way but differed in their approach to time management issues, and indeed in their attitude to time itself. It seemed likely that these different perceptions and attitudes would materially affect or influence the way in which these managers would approach their work, and in particular the management of their own time.

These differences in approach are well documented, as the following extracts indicate:

Time management is a very personal thing.
You must select from the dozens of

suggestions offered and tailor them to your needs (Mackenzie, 1972, p.vi).

Individual managers can have very different perceptions of the nature of their jobs . . . There were large individual variations [between the managers studied] in whether, and if so the areas in which, managers reported an analytical approach to their jobs (Stewart, 1982, p.90).

Time is not the same for everyone. Rather like the inkblot of psychological fame, people project certain aspects of their culture and of themselves onto their conceptions of time. Time seems to have a special meaning for those attracted to managerial careers (Webber, 1972, p.11)

As we might expect, a manager's concept of time says a great deal about his personality and about his outlook on life and work. (Barrett, 1969, p.62).

Thus was the idea born that, if one could identify a characteristic in managers which could be related to attitude towards time, this would be an aspect amenable to influence in support of instruction in effective methods of time management. It was recognised at the outset that time management behaviour was governed primarily by the determination of the manager concerned. In the words of Allen (1986), 'If you want to know what's important to you, look at how you use your time' (p.59). Therefore, for optimum effectiveness to be attained, the managers themselves would have to will themselves into effective procedures. This situation of self-determination would be helped by an understanding of the mental processes at work.

Such a project could be broken down into a number of constituent parts in this fashion:

- the search for some definition or measure of attitude to time;
- the search for an individual variable which might be related to attitude to time;
- the identification of aspects of time management which might be related to attitude to time;
- the development of a self-learning theory or programme which might help managers to form time management habits or practices which would help them more fully to achieve the work objectives which they thought important.

In this particular research the focus is upon the first and second of these parts, although the ultimate objective of trying to help managers to find a way to improve their own time management performance is implicit in much of what follows.

1.2 AIMS OF THE RESEARCH

In Section 1.1 the focus of the research was stated to be exploring managers' attitudes to time and relating them to some characteristics of the individuals, with the end purpose of increasing understanding of different methods of time management used by people in managerial positions. After the present state of knowledge in relevant fields was considered, the aims of the research could finally be enunciated in the following terms:

- (i) to investigate ways of analysing managers' attitude to time and to establish and administer an instrument which allows individual managers' attitudes to be described quantitatively;
- (ii) to investigate different personality attributes which may influence attitude to time and to administer a selected instrument to a sample of managers;
- (iii) to develop an instrument by which different approaches to time management can be described;
- (iv) to investigate possible relationships between the instruments described, particularly by an intensive study of a small sample of managers.

In spite of the intention to make use of instruments which allow quantitative results to be obtained, this research is

not primarily quantitative in nature. As is implied by the use of the word 'explorations' it is intended that hypotheses will be generated by the progress of empirical studies rather than by the preliminary desk research.

It is recognised that the variables being explored - attitude to time and personality characteristics - are themselves extraordinarily complex and that the use of a single measure to describe either variable adequately is impossible. This being so, such conclusions as may be drawn from the results reported in this thesis must be tentative and subject to limitations in interpretation which will be discussed. In addition to the fact that this is essentially a qualitative rather than a quantitative study, it is emphasised that the empirical results are obtained from limited samples and no claim for generality is made.

The hope which lies behind these aims is that, with all the limitations which will be discussed more fully in Chapter 8, our understanding of attitude to time and approaches to time management may be enhanced. With this understanding, those responsible for the development of managers, and individual managers themselves, may be able thereby to increase the effective use they make of their time.

1.3 STRUCTURE OF THE THESIS

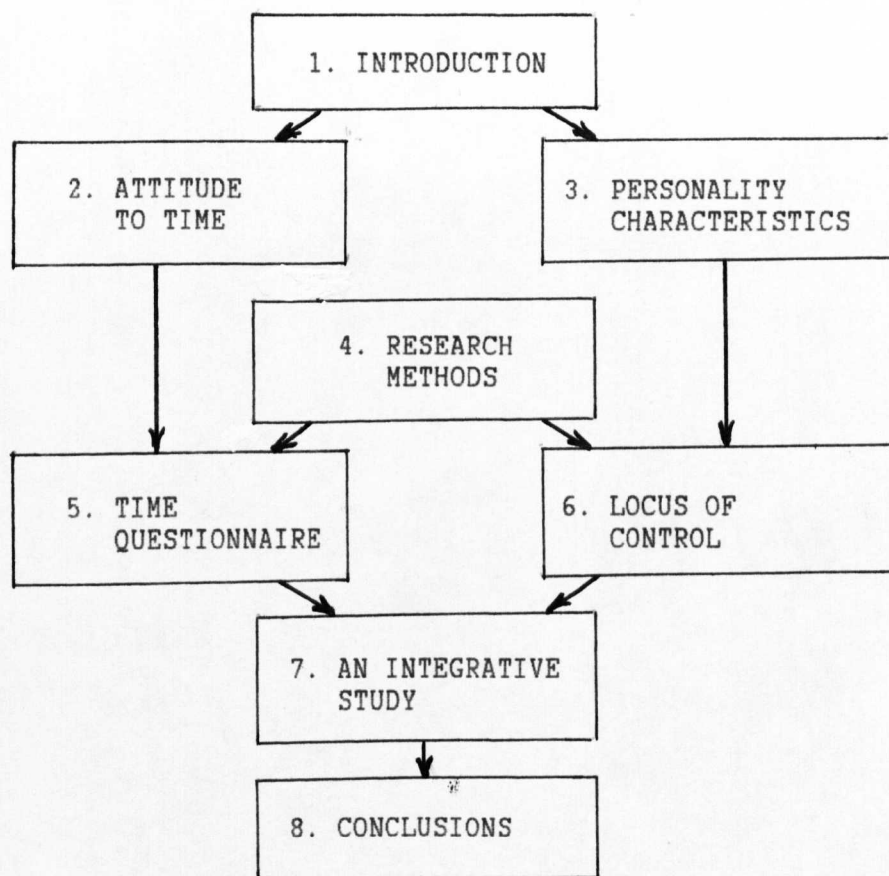
Three characteristics of this research need to be emphasised before the structure of the thesis can be properly described:

- as stated in Section 1.2, the research is essentially qualitative in nature, although quantitative techniques have been used to aid the interpretative process;
- although the chapters of this thesis must perforce follow one another in sequence, the research is an example of parallel rather than serial processing - the two main strands represented by Chapters 2 and 5 on one hand and Chapters 3 and 6 on the other were conducted quite separately, often using different respondents;
- the word 'explorations' refers particularly to the work on the attitude to time, in which each stage of reading and empirical work led to another of reading and empirical work to a greater degree than would be the case if hypotheses had been generated early and then tested.

This having been said, the contents of the chapters which follow are set out in summary form. The relationship of the two strands to one another and to the main thrust of the analysis and interpretation stages is shown diagrammatically in Figure 1.1.

FIGURE 1.1

DIAGRAMMATIC OUTLINE OF THESIS CONTENTS



The remainder of Chapter 1 deals with background material, both concerning studies which have been conducted with managers and concerning the nature of time. This last section provides an introduction to Chapter 2.

Chapter 2 outlines the research which has led to the present state of knowledge in areas relevant to attitudes to time. The principal themes which have been investigated are those outlined in Section 1.6, particularly those described as classifications of time. This chapter concludes with details of the Temporal Experience of Time instrument which was finally selected for empirical development.

Chapter 3 describes a number of theories and approaches to the identification of personality dimensions, including social learning theory which appears to be very relevant to this research. Then follows a description of the selected measure, Rotter's internal-external locus of control, and its applications.

Chapter 4 commences with a rationale for the approach used in this research, which owes much to the development of grounded theory. The principal methods used during the research - interview, self-report diary and questionnaire - are described, with an analysis of their shortcomings as well as the contributions they have been able to make.

Chapter 5 describes preliminary empirical research which pointed to the development of a new Time Questionnaire, based on the Temporal Experience instrument which had been used in studies with American students. The fact that in this chapter and throughout the research the respondents have been managers is emphasised.

Chapter 6 describes the administration of the instrument for identifying locus of control and the identification of dimensions within the scale.

Chapter 7 describes a study conducted among staff of City of Birmingham Council in which all the methods used during the research were applied to the same small sample of respondents. The derivation of a new instrument is described in which respondents identify the principal obstacles to time management they experience and their method of dealing with them. Comments which respondents made during interviews are related to the scores on the instruments described in Chapters 5 and 6 and to the responses to the 'obstacles' instrument.

Chapter 8 reviews the findings of the research, states what conclusions have been reached and sets out the limitations of the methods used. These lead naturally to pointers for further study arising from the gaps revealed in the research.

Appendices containing supplementary information are numbered to correspond with the chapter to which the information refers.

(On a stylistic point, because much of this thesis concerns the development of understanding, the present tense is appropriate; where the empirical work is described, because the investigation has actually taken place, the more usual past tense is used.)

1.4 THE MANAGERIAL CONTEXT

In the thesis the word 'manager' is used broadly to indicate any person invested with authority to make decisions concerning the use of resources. Initially the authority emanates from the governing body, board, or council and is delegated through a managerial structure, every member of which enjoys some discretion over the way in which the resources of the organisation shall be used. These resources may include finances, personnel, buildings, equipment and, in the case of the individual manager, knowledge and his or her own time. In practice most of the managers who have contributed, in one way or another, to this research are at least one level removed from operatives; that is to say that they manage the supervisors who in turn manage the operatives. This is the definition of the term which is widely used as, for example, in Stewart (1967, p.xi). Some contributors,

however, enjoy the status of managers and have similar authority and discretionary power in other respects while yet having a very small staff, or none at all. Drucker (1967) classified such people as 'knowledge workers' and described them as 'executives'. They are meant to be covered, in this thesis, by the broad usage of 'manager' given here.

In the public service the widespread use of the title 'manager' is of recent origin. In the National Health Service, the senior nurse in any hospital was the Matron; more recently, Regional Nursing Officer or District Administrator indicated top managerial responsibility and Nurse Manager is a title which has been introduced only in the present decade. In local government top managerial responsibility is associated with posts like District Planning Officer, County Surveyor and Clerk to the City Council; posts with 'manager' in their title usually indicate control over a relatively limited part of the organisation, such as Baths Manager.

This point is not a trivial one, as it suggests that the conventional attitude towards management in the public service, at least until the 1970s, has been one of subservience to an overriding professional organisation. This is not to say that the public service in the country was inefficient, but that professional rather than managerial criteria were applied to major decision-making. The argument

raised here is that this relegation of managerial considerations to a secondary level permeated the attitude towards working practices throughout the managerial structure. It is further argued that, as one's own time has not always been recognised as a resource to be managed in the same way as one's staff or physical resources, time management for managers in the public service has suffered a very low profile indeed.

Successive reorganisations, particularly since both boundaries and functions in most of England and Wales were redrawn for health and local government in 1974, have placed considerable emphasis on resource management and this has been reinforced by the various 'efficiency drives' stimulated by the present government. Understandably those people who have come to managerial responsibility in the last fifteen years see the management of resources as a prime function. This statement derives from personal observation and from many informal discussions with public sector managers. It has not been tested during this research, but some of comments offered during interviews in the course of the integrative study reflect the zeal of the newly converted (see Chapter 7).

The present research is unusual in the high proportion of public sector managers involved. This section is intended to provide background information for any readers unfamiliar with

the public sector.

1.5 THE ACADEMIC BACKGROUND - STUDIES OF MANAGERS

The study of management for the first half of the present century was pre-occupied with the need to classify and codify knowledge of the subject. Thus such titles as The Principles of Scientific Management (Taylor, 1911) were published alongside more general titles such as that of Fayol's article 'Administration industrielle et générale' (1916).

The fact that management is essentially a practical profession was little acknowledged until the second half of the century with the appearance of titles like The Practice of Management (Drucker, 1954) and The Reality of Management (Stewart, 1963). The practical orientation has been much in evidence, as could be expected, in the well-established branches of management like financial management, personnel management, production management. It has not been until much more recently that a similar orientation could be seen in the admittedly meagre literature on time management. Examples are How to Get Control of your Time and your Life (Lakein, 1973) and Effective Time Management - a Practical Workbook (Davidson, 1978).

1.5.1 Activity Studies

Under the title Executive Behaviour Carlson (1951), emphasising the point just made, complained that most managerial writing was of principles and generalisations, very little of it based on empirical studies. This his own work attempted to redress in a survey of the working practices of nine chief executives, concentrating particularly on the communication network they used. Burns (1954) studied the communication pattern of seventy-six executives, finding that his subjects spent 80% of their time talking. A figure of 75% spent in communication was record by Copeman (1963) in his study of fifty-eight executives. He suggested that, if this figure could be reduced by 20-25% the manager could double the time available for creative work and possibly double his effectiveness as a result. This presupposes a view of the managerial role which may not receive universal approval.

Copeman's sample consisted of twenty-nine chief executives and twenty-nine departmental heads, allowing a comparison to be drawn between them. Another study in which comparisons were made, this time between functions, was reported by Webber (1972). The discussion was centred on discretionary control and leadership style as between general executives, sales managers, functional control managers, service managers, operating supervisors and staff specialists.

In contrast to these studies comparing results from managers in different functions, Stewart (1967) selected a similarly representative sample of 160 managers but analysed results from the whole sample, underlining the fact that there is much in common between managers in different functions when discharging their managerial responsibilities. Noting that most earlier research had sampled industrial managers, the present writer studied thirty-six managers in local government, finding that his results compared broadly with those reported by Stewart (Austin 1975).

1.5.2 Principles and Practice

Adcock and Lee (1971) reported a survey of sixty-four executives in which they set the observed results of activities against a set of ten management principles appropriate to time management, derived by Adcock. Although the managers who contributed to the study acknowledged the importance of the principles, few of them actually put the principles into practice. In a more searching survey, Horne and Lupton (1965) related the actual activity pattern observed in the work of sixty-six middle managers with managerial principles. Contending that managerial principles could be associated with formulating, organising, regulating and control activities, they found that relatively little time was in fact spent in formulating activities, which accords with

Copeman's (1963) observation that too little time was devoted by managers to creative work. Horne and Lupton noted very little difference between the results recorded by respondents from different industries or from firms of different size. However, an examination of their results shows that there were wide variations between managers within the same category.

A more comprehensive approach was described by Hemphill (1960) who invited ninety-three managers to estimate the degree to which each of a list of 575 activities applied to their position. By grouping related activities he used the responses to develop a set of ten independent factors (such as providing a staff service, or business control, or long-range planning) which could be used to describe any executive position. As in the Horne and Lupton study, although it was possible to establish profiles for particular positions, weightings varied, often quite markedly, between managers holding the same position. A major distinction between the two studies just described is that Horne and Lupton studied what managers actually did while Hemphill tried to discover what managers should do. In effect, the focus of the former was on the managers themselves, whereas Hemphill focused on the managers' roles.

1.5.3 Managerial Roles

Stewart (1967), in analysing the results of the twenty-five variables in her study, was able to establish a typology based on the balance of different activities, classifying writers, emissaries, discussers, committee men and trouble-shooters. In a later work, Stewart (1976) suggested two different typologies, one based on type of work pattern (systems maintenance, systems administration, project and mixed) and the other on contact pattern (hub, peer-dependent, man management and solo). Another role study conducted by Mintzberg (1973) identified ten observable roles, which he then grouped as: interpersonal roles (figurehead, liaison and leader); informational roles (monitor, disseminator and spokesman); and decisional roles (entrepreneur, disturbance handler, resource allocator and negotiator). He described the use of these roles as follows:

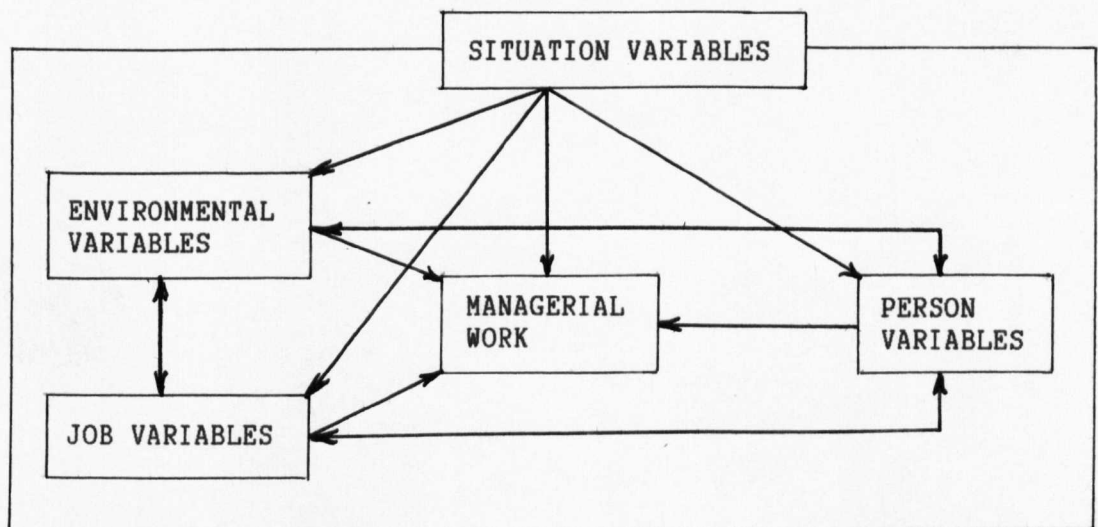
The three interpersonal roles derive from the manager's formal authority and status; these give rise to the three informational roles; and these in turn enable the manager to perform the four decisional roles (p.96).

From his analysis of the differences between the five managers he studied he formulated a contingency theory of managerial work. According to this the work of a manager at any time is determined by environmental variables (characteristics of the organisation and the industry), job variables (the level of

the job and the function supervised), person variables (personality and style characteristics) and situational variables (temporal features such as seasonal variations). This concept can be represented by the model shown as Figure 1.2.

FIGURE 1.2

MODEL OF MINTZBERG'S CONTINGENCY THEORY OF MANAGERIAL WORK



1.5.4 Time Management

One of the first writers to enunciate principles which managers could follow to make their use of time more effective was Drucker (1967) and his three-point plan (record, manage and consolidate time) is simple but useful. To judge by the books, articles, seminars and workshops which have been offered through the years since Drucker's book, a great need for prescriptive advice has been expressed by managers. It can be argued that the management of a specific function places a clear obligation on prospective holders of such managerial posts to master its complexities; the management of time, on the other hand, is so 'natural' and 'obvious' that it receives less thought and preparation than it deserves.

Two surveys carried out with chief executives support the argument that, even in top managerial positions, there is a lack of time management skill. In Margerison's survey (1980) of 208 chief executives time spent in meetings was the greatest single item of time spent; Margerison used the opinions of the participants as a form of prescription for success. In the Humble and Spooner (1980) survey of 410 chief executives various participants expressed surprise at the results of a time log; Humble offered prescriptive advice on how to handle many of the time problems which were mentioned by the managers.

Time management for Drucker was just one element in the wider field of personal effectiveness. Others with a similar orientation are Rothery (1972), A. Kelly (1973), le Boeuf (1979) and Armstrong (1983). Although the use of time figured as important in these works, attention was also given to such things as decision-making, team leadership, strategic planning and self-development.

A specific focus on the management of time was used by Lakein (1973), whose emphasis was to give advice under headings of 'How to . . .', and in Lover (1978), who established a range of principles, especially as guides to the scheduling of tasks. Mackenzie (1972) in a useful classification offered practical advice particularly on making full use of opportunities. Mackenzie also collaborated with others in giving advice specifically to Christians in business (Engstrom and Mackenzie, 1967) and to housewives (Mackenzie and Waldo, 1981). Reynolds and Tramel (1979) divided the subject into logical sections using the cachet 'for everything there is a season'; chapter headings included: 'A time to plan', 'A time to do paperwork' and 'A time to decide'.

An approach used by several writers has been to identify those things which managers say prevent them from being in control of their time, described variously as time problems, time

wasters or time robbers. In the chief executive study referred to above Humble and Spooner invited their respondents to rank a selection of thirteen time problems. Moore (1968) surveyed almost three thousand managers in U.S.A. and identified the ten principal interferences in the effective use of time. In a similar study in Australia Smith and Mackenzie (1981) surveyed 1385 managers and ranked the principal time wasters. In interviews conducted by Knibbs (1979) he found a number of time problems were acting as a source of worry to his subjects. Newman (1977) selected three of the most severe time problems for her recommended solutions and cautioned readers in planning their time to allow for 'unforeseeables'. Rutherford (1981) also considered time barriers as a major source of difficulty but offered suggestions for the establishment of strategies for time management as a worth-while approach. Ferner (1980), who suggested that using a time log was the first stage, placed the identification and treatment of problems within a strategic cycle of stages of time management.

Several writers have recommended the use of a time log or diary to obtain information on how they actually spend their time. Some have strengthened this recommendation by offering diary forms, with instructions on how they might be used and analysed, in a workbook format. Davidson (1978) and Ferner (1980) are two of these while the writer has published a third

(Austin, 1979) which was based on a two-stage principle by which managers might concentrate on those particular aspects of time management which presented most difficulty for them.

The importance of establishing goals before moving into detailed time planning was stressed by Lane (1980), while Douglass and Douglass (1980) have included an excellent chapter on changing habits following chapters on coping with time problems and setting objectives. Labovitz and Baird (1981) recommended the use of a time log and provided a guide for effective time use. In similar vein Trickett (1962) had earlier offered a diary layout, linking it with recommendations for planning for the future. 'Managing longer term time' was the title Webber (1980) used for the second part of his book, concentrating on important issues such as delegation and handling stress. Jones (1968) emphasised the significance of time as a resource by suggesting that decisions on such things as alternative capital projects should be based, not on finance as usual, but on available managerial time.

Although Humble and Spooner (1980) warned that 'time management is often presented as a collection of time-saving gimmicks' (p.23), many managers seem to be grateful for advice even on what might be regarded as trivial issues, and even when not offered as part of a strategic approach to time

management. Another warning, against what might be termed the 'conventional wisdom' of time management was issued by Allen (1986). In her book she emphasised that individual goal-oriented plans by individual managers often became unrealisable in the environment of their organisation, and also that the most logically developed set of objectives was liable to be upset by a lack of real commitment.

In a clear message that managers had the capacity to learn or develop effectiveness in time management, Barrett (1977) enumerated five stages through which they could pass, after leaving:

- Zero level, represented by people who were time-blind and could not recognise time as a major resource.
- Stage One came when people realised that time was money and that it was limited to twenty-four hours a day; Stage One managers were time savers, who avoided spending too much time reading, travelling and letter-writing and delegated more.
- Stage Two time managers were time users who began to budget their time, allocating appropriate amounts of time to different matters of concern, and planning months ahead.

- Stage Three time managers recognised that the future was far more important than the past or present and therefore developed their forecasting.
- Stage Four time managers were goal-orientated and planned to make the future happen; they were actors, not reactors.
- Stage Five time managers reached the ultimate in ability by realising that the future could be created; they were the innovators, inventors and visualisers who conceived ideas and then proceeded to bring them into existence.

This conception of time management offers a challenge to those involved in encouraging a more effective use of time by students or staff.

1.5.5 Discussion

The importance of activity studies is their focus on what managers actually do, in contrast to what the broad principles of management suggest. The Adcock and Lee study (1971) demonstrated this contrast. Another contrast is provided between the Horne and Lupton study (1965) of the manager and the Hemphill study (1960) of the managerial role. These studies emphasise one of the dilemmas of research into managerial activity which on the one hand is at pains to demonstrate that management as an art and science is the same wherever it is practised, but on the other recognises that no two managers approach the same job in quite the same way. From the viewpoint of this research this is probably one of the most important issues to consider in detail.

The role studies of Mintzberg (1973) and Stewart (especially 1976) provide useful insights into what could be described as a 'meta-analysis' of managerial activities. For the organisational scientist an understanding of the full significance of particular posts is of value, which is shared by those responsible for appointing or promoting men and women into these posts. For individual managers they can also be of assistance in that setting objectives and priorities easily slips into the error of too detailed an approach without the broader canvas which can be provided by a proper understanding

of the roles they are expected to play.

The review of time management in Section 1.5.4 may appear on the surface to be irrelevant to this research. Its inclusion is justified in that the selection of appropriate temporal behaviours or, in other words, time management, is the ultimate objective towards which the present research is leading.

One of the phrases indissolubly linked with this field of study is 'the effective use of time'; yet the word 'effective' has not been defined. As a concept it is potentially useful but there is much debate about its precise definition. The debate stems largely from the need to agree an operational definition before progress can be made in measurement; and without measurement it is impossible to say for certain that one manager is more effective than another, or that one manager has improved his or her effectiveness through adopting a new strategy. Lay use of the word might approve a particular outcome being effective if the original goal was achieved, irrespective of the cost involved; an example of this might be the saving of life by the immediate deployment of emergency services after a major motorway accident. In normal circumstances, when cost ought not to be ignored, the use of a phrase like 'effective use of resources' might serve to make the meaning clear. Possible approaches to the

measurement of effectiveness are outlined in Appendix 1.1.

Another word which is a useful concept but which has not been discussed is the word 'objective'. In this thesis it will be used as synonymous with 'aim' or 'goal' and will be preferred to these other words. Some authors distinguish between them but, provided that a hierarchy of objectives of different orders can be accepted, there seems little merit in taking issue on the question. What is more important for the practising manager is the skill of setting objectives. A description of the essential elements of the formalised approach termed 'Management by Objectives' (MbO) is given in Appendix 1. An extensive literature exists on the subject and a brief review of this literature is also given.

1.6 THE ACADEMIC BACKGROUND - CONCEPTS OF TIME

1.6.1 The Nature of Time

Nothing is longer, since it is the measure of eternity.
Nothing is shorter, since it is insufficient for the accomplishment of our projects.
Nothing is more slow to him that expects; nothing more rapid to him that enjoys.
In greatness, it extends to infinity; in smallness, it is infinitely divisible.
All men neglect it; all regret the loss of it; nothing can be done without it.
It consigns to oblivion whatever is unworthy of being transmitted to posterity, and it immortalizes such actions as are truly great (Voltaire, in Douglass and Douglass, 1980, p.1)

This almost quizzical view of time encompasses in a few lines much of the wide range of perceptions held by ordinary people about time. The multi-faceted nature of time suggested by the quotation accords with common experience but it seems to be denied by the fact that time measurement occurs by reference to the clock or the calendar. As Orme (1969) concluded:

In general, our modern homogeneous view of time, devised largely for simplicity and accuracy of measurement, is only the end product of a long development of phylogenetic and ontogenetic systems stressing the heterogeneity of time The modern homogeneous view of time is in fact taken to be the accurate theory of time in general. Whatever its use for the purposes of time measurement, it will be seen later that this implied theory of time is highly disputable (p.56).

The essence of Orme's argument in favour of heterogeneity had probably been accepted in what can be seen as a compromise view of Fraser:

To make this or any cooperative venture directed to the problem of time meaningful and any systematization based on time possible, the following basic assumptions are made:

1. When specialists speak of time, they speak of various aspects of the same entity.
2. This entity is amenable to study by the methods of the sciences, it can be made a meaningful subject of contemplation by the reflective mind, and it can be used as proper material for intuitive interpretation by the creative artist (1981, p.xxi).

Fraser called these assumptions the 'unity of time', suggesting that all, 'even working separately, are nevertheless headed toward the same central idea' (p.xxi). This definition of the unity of time by assumptions Fraser contrasted with the diversity of time which, he said, 'hardly needs proof; it is all too apparent' (p.xxi).

The pervasive nature of time was emphasised by Vella (1977):

The recognition that man is inundated by time, both externally in the world around him and internally in his psychological memory and imagination, has resulted in a multiplicity of viewpoints in the historical analysis of the parameters of time (p.3).

The personal nature of the internal aspects of time was brought out by the physicist A.S. Eddington in these words:

Thus we have immediate experience of the time relation. . . . When I close my eyes and retreat into my inner mind, I feel myself enduring . . . It is this feeling of time as affecting ourselves and not merely as existing in the relations of external events which is so peculiarly characteristic of it (quoted in Lehmann, 1967, p.798).

What emerges from these two quoted statements is the close interplay between internal and external time; even time which is accurately measured, and which thus appears to be independent of observer bias, is subject to interpretation in the attempt to locate the measurement in the context of other events and the external situation generally.

The subjective nature of the interpretation gives rise to Vella's 'multiplicity of viewpoints'. It also adds a dimension to another controversy which concerns whether time is linear. This linear belief was described by Gioscia (1972) as the traditional Western conception of time, his examples being the sequences:

past - present - future;
birth - life - death.

This latter example was adopted by Kastenbaum (1965) to describe the linear assumption as applied to a lifespan. The formal characteristics would be '(a) equally spaced units, (b) traversed at a constant rate, (c) without interruption and (d) unidirectionally' (p.190). Pointing out that this paradigm stands in obvious contrast to experienced time, he quoted the light-hearted example of 'Jack Benny's introduction of the enormous psychological distance between age 39 and age 40' (p.190). Related to differences in psychological distance between one age and another are differences in the experience of rate of movement. A child, for example, will sense having to wait an eternity for its next birthday, whereas older people find that birthdays seem to come along all too quickly.

Arguing from a different starting point, Sherover (1981) cited time as the mode whereby one entity or event was related to others; thus its time relations were intrinsic to the event; thus time was inherently relational. He regarded classification of a series of events as sequential as a simplification, whereas sequentiality was only an element in the complex 'network of functioning relations', in which time 'involves any particular entity or event with others' (p.140). It was in pursuing this concept of a network, arguing from philosophical grounds, that Sherover came closest to the space-time concept of Einsteinian relativity. In this sense it provided an example of Fraser's assumption of specialists speaking of different aspects of the same entity.

1.6.2 Attitudes to Time

In outlining various views of the nature of time, it has been impossible to avoid constant frequent references to subjectivity, to individual perceptions, to the interplay between internal and external experiences. These are different phrases to describe what can be thought of as different attitudes to time. Knapp (1972) quoted Piaget as saying: 'the sense of time emerges but slowly in childhood in consequence of successive and laborious abstraction' (p.313). This emergence and subsequent development of the sense of time is a highly individual process, although one can generalise

about the phases through which children, then adolescents, then adults pass. H.B. Green (1975) pointed out that in childhood there was little consciousness of past or future but, with adolescence the analysis of 'each of society's institutions: education, occupation, religion, government, class structure and the family' began to lead to a choice of which future to pursue (p.8). He continued that later in old age retrospection led to an increased concentration on the past.

Attitude to time does not derive solely from one's position in the age spectrum, as is clear from the examples given in the previous section on different perceptions. Fraisse (1964) set out the relationship between attitude and a number of factors in these words:

Our perceptions are a function of the nature of the stimuli but also of the 'assumptions' with which we apprehend them. This assumption itself depends on our previous experience, on the context of the perception, and on our personality, all these factors contributing toward our attitude. The less compelling the event, the more difference our attitude can make. Not only does it have an effect on our constant selection of sensory information and on the significance we attach to this, but it can even modify the apparent size of objects (p.145).

Reference has already been made to subjective interpretation of a quality which appears to be quite objective. Fraisse went on to suggest that attitude played a larger part in time

than in space, 'for all perception of succession is evanescent by its very nature, whereas in the case of spatial perceptions, it is possible for the perception to be compared with its object' (p.145).

Another view of the antecedent factors determining attitude was given by Sherover:

The selectivity of perceptual focus arises out of the needs or interest of the observer's attentive thinking; his judgment is structured by the modes of thought invoked to respond to the questioning interest that initiated it and brought it forth. Thinkers as disparate and yet similar as Leibniz, Kant, Peirce, Royce and Heidegger - and Plato, too - have presented cogent reasons for this thesis that perceptual attention and consequential judgments constitute interpretive activity arising out of the particular thinker's peculiar finite perspective (1981, p.142).

Once again concepts like perception, perspective, interpretation are used to describe the essentially personal and subjective attitudes to time which are at the heart of this research.

One further example of the significance and the power of attitudes to affect behaviour was given by Heirich (1964):

. . . attitudes toward time can be dynamic factors in themselves, for specific moments of time acquire a social meaning of their own. For example, October, 1929, becomes socially important as the month of the Wall

Street crash. This specific time, marking the culmination of an earlier process, evoked memories that still affect the actions of many people (p.387).

Examples such as this provide evidence for the general contention in Section 1.1 that attitude towards time is a powerful factor governing temporal behaviour. From the viewpoint of this research, therefore, such statements assume great significance and Chapter 2 is devoted to a detailed review of time perspective and time attitudes.

1.6.3 The Effect of Culture

Taking punctuality as one aspect of time which is in evidence in ordinary living, one could with confidence say that Swiss trains run on time; a similar statement in Britain would probably evince a smile. In Ireland, to give another example, arriving at a formal dinner at the time the meal is due to be served might leave one alone for a while since nobody believes the set time. Neither in Switzerland nor in Ireland would these examples be found unusual; they reflect the culture of the country concerned. Businessmen travelling in Middle Eastern countries speak of the importance attached to ritual in connection with an appointment but the ritual has little to do with punctuality.

To draw attention to these cultural differences between countries, Fraser (1981) included contributions on 'Time in

Indian and Japanese thought' and 'Time and knowledge in China and the West'. Watanabe (1975) spoke of Buddhism in which causality, time and being formed an inseparable trinity. Buddhism, being a passive religion, apparently does not discuss how man uses causality to achieve his own ends but is rather concerned with ways of discontinuing the causal chain. 'For those who have entered nirvana, there is no time', nirvana being described as the cessation of all desires. 'In other words, presence and absence of desires imply respectively continuation and discontinuation of the temporal chain of causation' (p.268).

It is not only in Eastern or Middle Eastern countries that we find a cultural influence on attitudes to time. Knapp (1962) noted the influence of the rise of North European Protestantism on the psychological evolution of Western man. One of the foremost aspects of this was 'the emergence of certain secular psychological attitudes and interests' (p.85).

He continued:

Among these have been an interest in the nature of measurement of time culminating in the Newtonian theory of time and the rise of the technology of time measurement. This sense of time, which we tentatively identify historically with the Protestant, and more especially the Calvinistic, character structure, has made possible some of the unique attainments of European culture, notably the rise of science and technology, the development of industrialism, the organization of capitalistic enterprise, etc.

The argument advanced by Knapp finds support in the traditional approach to time management, based on the treatment of time as a scarce resource which needs to be devoted to productive ends. As such it has a bearing on the underlying aspirations of the present research. As Doob (1971) stated when considering the decisional roles which humans play in society:

Clearly cultural factors play the decisive role in determining which aspects of existence are considered to be beyond human intervention and which are subject to control; but in any society some intervention is assumed to be efficacious (p.48).

1.6.4 Classifications of Time

Fraisse (1964) set out to study 'the different ways in which man adapts to the temporal conditions of his existence' which he called 'temporally organized behaviour' (p.10). He differentiated between three main groups of reactions which corresponded to three levels of adaptation:

- conditioning to time, a biological adaptation in which external stimuli such as the day-night cycle induce the same rhythm in our organism, which in turn acts as a physiological clock which we use for temporal orientation;

- perception of time, which starts with the perception of the present and includes perception of duration;
- control over time, which is the use made of perception and memory, and thus a temporal horizon.

Lehmann (1967) based his classification on the distinction between internal and external time. Making the point that much of the literature on the psychology of time was confused as a result of unclear definitions and vague concepts, he distinguished four basic modes of experiencing the flow of time:

- external time calculation, based on psychophysical and cognitive processes;
- internal time estimation, based on cognitive and perceptual processes;
- internal time awareness, based on perceptual and affective processes;
- internal time perspective, based on affective and existential processes.

Each of Lehmann's four modes is based on two psychological processes, one of which overlaps the next step of time experience. From step to step the processes involved in the experiences become more complex, from the clearly definable measurement of universal time at one extreme to the 'emotional and transcendental experiences in one's attitude toward the personal past, present and future at the other extreme' (p.799).

Hoornaert (1973) echoed Lehmann's statement that there was confusion in the literature on psychological time because of unclear definitions and vague concepts and proposed a classification with much in common with Lehmann's:

- time calculation, including not only the use of precise instruments for measuring changes in physical mechanisms but also time orientation, in a general sense, in which human beings orient themselves and situate events on the time continuum;
- time orientation, in a restricted sense, by means of a biological or physiological clock, or by reference to natural or life cycle;
- time estimation, including the broad concept of time awareness as well as the capacity to judge the duration

of an interval;

- time perspective, in which events from the past and present can be seen in relation to anticipation of the future. In Hoornaert's view, 'in contemporary psychological study of temporal behaviour the study of time perspective comes first' (p.268).

Comparison between the classifications of the three writers just described can be facilitated by reference to Table 1.1.

<u>TABLE 1.1</u>		
<u>COMPARISON BETWEEN THREE CLASSIFICATIONS OF TIME</u>		
<u>Fraisse</u>	<u>Lehmann</u>	<u>Hoornaert</u>
conditioning	calculation	orientation calculation
	estimation	estimation
perception	awareness	
	perspective	perspective
control		

Fraisse's classification seems to be the broadest of the three, ranging from unconscious biological process through to what we might call time management. Lehmann, although omitting the biological process altogether, expanded what Fraisse termed 'perception' into three modes. Hoornaert

included a biological process equivalent to Fraisse's 'conditioning'; in his definition of 'estimation' he included the 'awareness' mode of Lehmann but otherwise his classification has much in common with Lehmann's.

The book from which the Fraisse classification is taken merits special comment. When first published (1957, in French) this was probably the only significant book on the psychology of time. The classification seems to place great emphasis on the measurable aspects of time, perhaps reflecting the relative novelty of the concept of temporal psychology at the time of writing. Orme (1969) observed that Fraisse seemed prone to fit observations and experiments on time into the existing framework of psychology, which he claimed was no longer adequate. H.B. Green and Knapp (1973) stated that the book 'seems now somewhat descriptive and sequential . . . lacking rigor in the selection of samples and the application of statistical treatment . . .' (p.457). For these reasons it will be the vocabulary of the more recent classifications, rather than that of Fraisse, which will be used in further discussion of the literature (See Chapter 2).

1.6.5 Two Theories of Time

It is useful at this stage to describe and compare two different views of psychological time.

Orme. In a survey time of phenomena in time experience, Orme (1969) included precognition, déjà-vu (which he related possibly to precognitive experience), mystical experiences, sleep and waking (especially the ability to wake at a specific time), and hypnosis. He concluded:

The association between awareness and time therefore appears to be a constant one. Furthermore, a variety of phenomena are clearly involved. Certain of these phenomena are so complex that it is extremely difficult to find explanations for them within the framework of commonly accepted views on the nature of time (p.28).

He suggested that the evidence was tilted towards the validity of precognitive phenomena. Reporting results from a variety of experiments on time estimation, duration or awareness, and time localisation among others, he observed that many of the findings could reflect an introversion-extraversion variable, although many of the studies reported conflicting results. Orme made clear in this connection his disenchantment with pencil and paper personality tests.

Discussing different philosophical views of time, Orme regarded the present as the only reality; the past ceased to exist, leaving only a residual effect on the present and the future could only be inferred from the data of the present. He next supposed that it was a property of organisms that they possessed an extension in time covering their life span. This

he represented in a fixed position with respect to a time axis, with a single movable space axis. This space-time framework for the organism constituted a permanently existing field of force, regardless of the particular location of the present. This framework is represented in Figure 1.3.

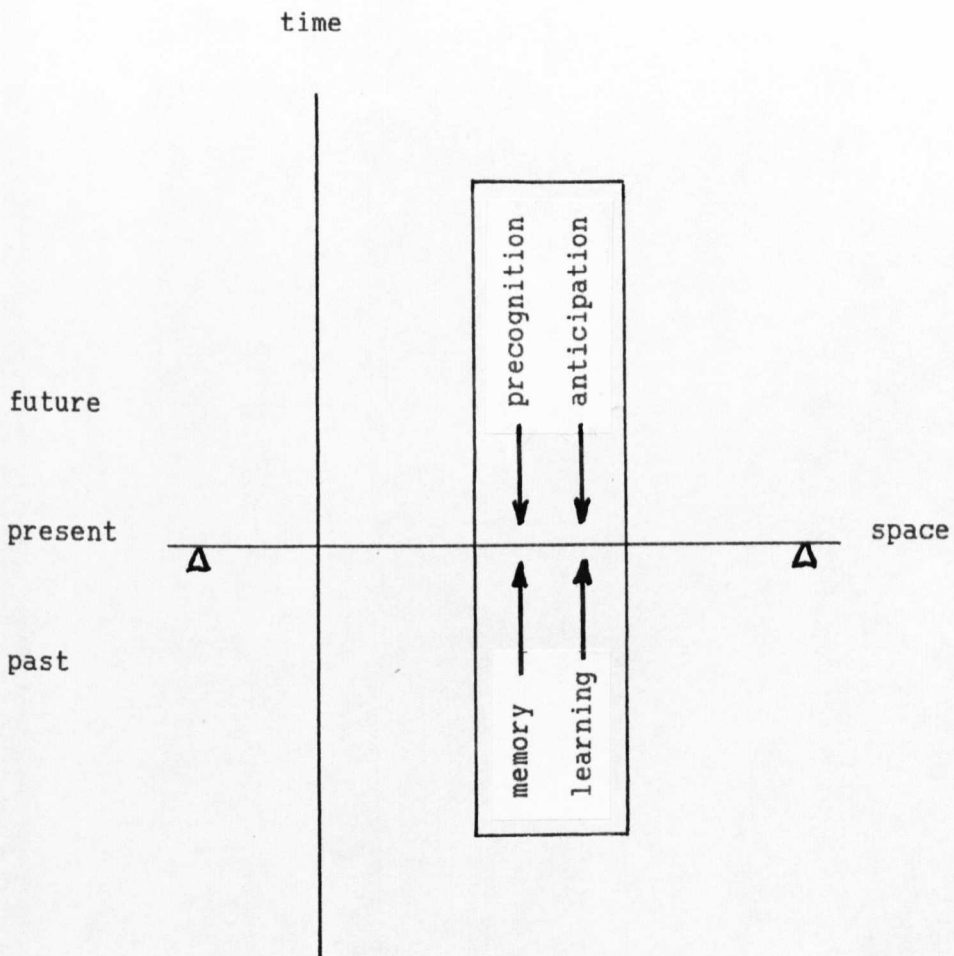
Orme postulated that memory was simply communication from the past to the present, which would also apply to learning; what is more novel is the description of precognition, and also anticipation, as communication from the future. While in normal waking life one is attentive to the present and its problems, in states of reflection, sleep or hypnosis he suggested that communication from the past and the future would become more dominant.

On this model, all of a person's past is at least potentially available, which accords with Freud's view that past experiences are all registered, even if not immediately recallable. In discussing possible applications of his model, Orme instanced selective loss of memory following an injury to the head; it could be explained as interference with the transmission of information from the area surrounding that event. While Orme quoted several instances from abnormal psychology, the model has utility also in understanding normal experience. An example is the fact that performance is related to the amount of previous performance of the same

FIGURE 1.3

AN ORGANISM IN ORME'S SPACE-TIME FRAMEWORK

(adapted from Orme (1969), Figure 8.3, p.159)



skill; each performance can be described as contributing to the total information available for reception at a later date. It is not only in its explanatory power in respect of education and training that the model has a bearing on the development of managers. The capacity to anticipate, and the imaginative and creative skills which are useful in all kinds of planning activity can on this model be thought of as information from the future.

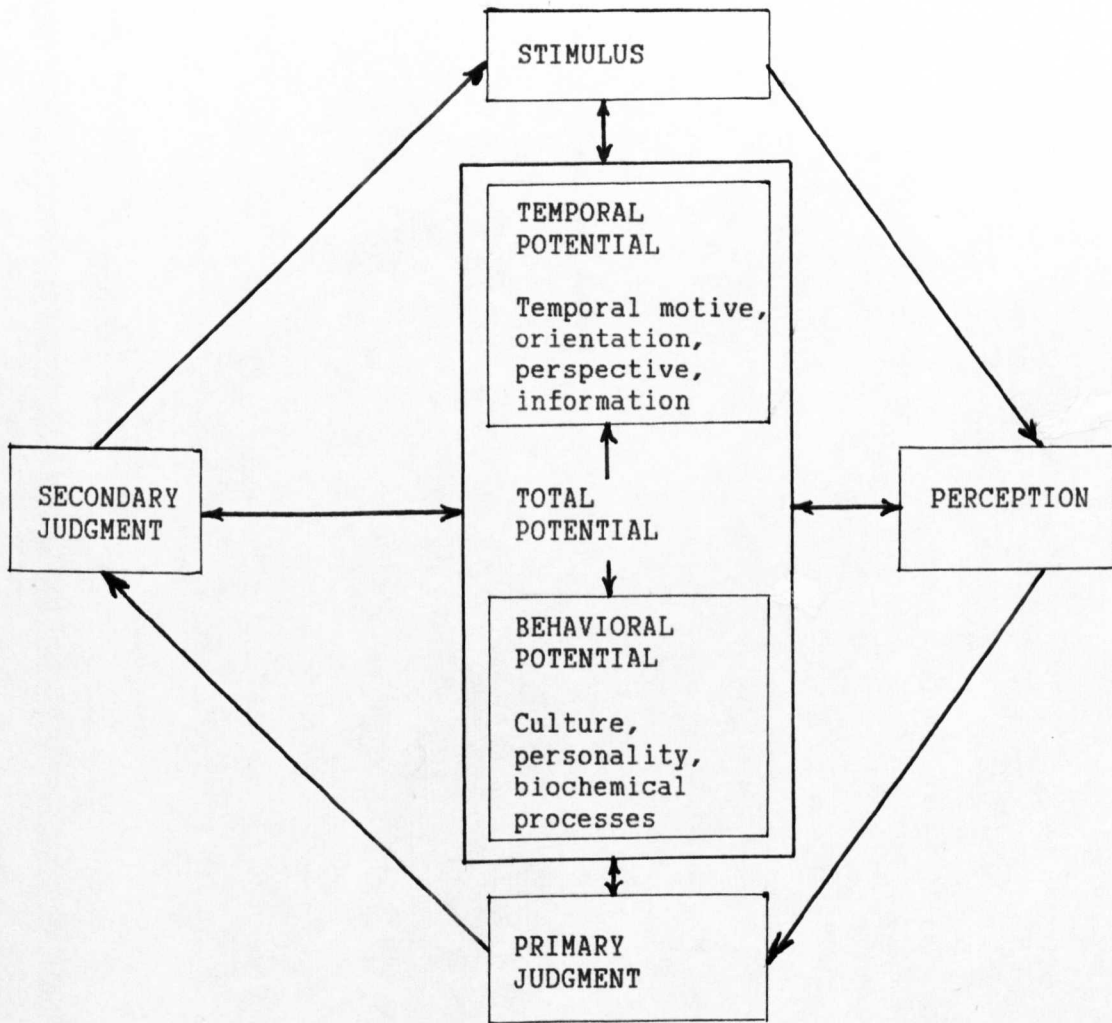
Doob. In what was probably the most comprehensive treatment of the psychology of time since Fraisse's Psychology of Time (1964), Doob (1971) reviewed research in the field and provided a unified approach to the subject. The book was the result of 'looking searchingly at the whole behavioral universe in order to locate significant factors' (p.30). Doob made the point that these factors might, but need not, exert tremendous influence on temporal behaviour and therefore termed the factors 'potentials'. The inter-relationships between the six groups of potentials are shown on the diagrammatic representation of his taxonomy (see Figure 1.4) by the linking arrows.

In the central box in the diagram is the set of general tendencies 'embedded in the individual' which he termed 'behavioral potential', described in terms of recollecting, experiencing, anticipating. Elements of 'behavioral

FIGURE 1.4

DOOB'S TAXONOMY OF TIME

(adapted from Doob (1971), Chart 1, p.31)



potential' are: culture, used here in the sense of a personally acquired culture; personality, including intelligence and skill as well as temporal perspective; and biochemical processes, including the individual's age as well as the biochemical clock. 'Temporal potential' includes a more specific set of potentials: temporal motive, which has to do with the significance of the moment or interval with regard to the goals being pursued; orientation or perspective, which refers to past, present or future, and whether temporary or enduring; temporal information, which includes both the set of data concerning hour, date, age etc., and beliefs and attitudes evoked.

This total potential, made up of temporal and behavioural aspects, represents the individual in contact with an environment which acts as a stimulus. The four surrounding boxes indicate four detailed groups of potentials which follow the sequence: stimulus; perception of the temporal content of the stimulus; primary, or immediate and spontaneous, judgment; and secondary judgment, which results from consideration on the basis of experience. (In Doob's original diagram each of the four surrounding boxes contains a set of three interacting components; this refinement is unnecessary for the appreciation of the whole model.) At each stage in this peripheral sequence the reversible arrows indicate recurring reference to the set of central potentials.

The models compared. Doob's model presents an interesting contrast with that of Orme. In the case of Orme the focus on the present can be regarded as emphasising that temporal decisions need to be made with all the available information, and these decisions are made in the present. The simplicity of the Orme model is in sharp contrast to the Doob model, which emphasises the complexity of the (often unconscious) stages through which a person passes in translating a stimulus into readiness for action. In effect, the large number of interacting components (including those in the peripheral sequence not shown in Figure 1.4) represent informational sub-headings which all make a contribution to the readiness of the person to make a temporal decision.

A feature of Doob's hypothesis is its neutrality. Many theories, particularly those based on the work of Freud or Jung, suggest that a tendency to behave in a certain way is likely to accompany a particular combination of traits. The neutrality of the Doob taxonomy allows any such theory to be examined and the relevant cognitive process to be dissected using his terms.

The very word 'potential', which is at the heart of the taxonomy, is helpful in establishing a learning theory; development of a person's skills and abilities depends not only on the information which is specifically provided but

also on the person's potential to convert the sum total of information into some form of behaviour. From the viewpoint of this research, both Orme's 'information' and Doob's 'potentials' can aid the insight needed to analyse managers' attitude to time.

CHAPTER TWO

ATTITUDE TO TIME

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2.1 INTRODUCTION

As indicated in Section 1.2, the focus of this research is exploring managers' attitude to time and relating it to some characteristic of the individual, with the end purpose of increasing understanding of different methods of time management used by people in managerial positions. Ultimately the hope was expressed that this increased understanding would help managers themselves to work towards making more effective use of their own time.

This chapter is devoted to the first stage described above, that of exploring managers' attitude to time, which has already been introduced in Chapter 1. Various interpretations of attitude to time and its development were quoted in Section 1.6.2, which lend support to the contention of this research that attitude to time plays an important part in determining temporal behaviour. In Section 1.6.4 various classifications of time were reviewed and elements of these classifications will now be explored for their potential utility for this research programme, including their behavioural potential.

Time Calculation. It will be remembered that in Lehmann's (1967) classification of modes of experiencing time, time calculation was the only mode which was classed as external.

Lehmann explained that time calculation normally depended on instruments, although cognitive processes were involved in learning to read and operate the measuring equipment. For practical purposes one may regard time calculation as in the field of physical time, whereas the other three models, which Lehmann described as internal, are clearly aspects of psychological time.

Time Orientation. Hoornaert (1973) classified time orientation 'in a restricted sense' separately from other aspects of psychological time. In this he echoed Fraisse (1964) although the latter used the more general term 'time conditioning' in naming this mode. Describing the effect on the organism of periodic changes in the environment, where 'time acts as a conditioning stimulus', Fraisse continued:

Thus under the influence of periodic changes, the organism becomes a physiological clock which provides cues for temporal orientation both in animals and in man (p.15).

Because of other meanings attached to 'orientation' in the literature, Hoornaert's alternative name 'time localization' is to be preferred when discussing physiological phenomena.

Time estimation. Estimation of duration of time intervals has occupied a major place in the history of research into psychological time. Lehmann mentioned tests on time estimation production (where subjects were asked to engage in

some activity for a specified time) and time estimation reproduction (where subjects were asked to reproduce an interval which had just been given). Orme (1969) also mentioned tests on verbal estimation of intervals and comparison of time intervals. An interesting experimental result reported by Orme was that the estimate of experienced time appeared to be inversely related to the rate of believed progress towards a goal. Other studies reported by Orme found associations between time estimation and academic achievement, thought about the future, and various standard laboratory tests.

Time estimation was described by Hoornaert as 'the most traditional and oldest problem in the study of temporal behaviour' (p.267), and his references are as early as 1864. Woodrow (1951) described a number of laboratory experiments relating to perception of duration, observing that time was always judged indirectly by means of some process that served as a cue. Albert (1978) reported a number of studies which showed that memory, impression formation and time estimation were a function of subjective time.

Epton (1972), in considering the view that projects take much longer than expected to complete, proposed a thesis that 'time is inherently underestimated because estimators are influenced by a time horizon which has no objective existence' (p.141).

Taking the concept of the time horizon from Fraisse, Epton proposed that, by assigning time horizons to individual estimators, management might be able to allow for corresponding bias in future estimates. K. Green (1973), building on Epton's report, considered the cost significance of project over-runs and Milliken (1973) described a 'program trend chart', an empirical means of compensating for underestimation, used by the National Aeronautics and Space Administration during the manned space flight programmes.

Time awareness. Hoornaert noted that the broader concept of time awareness was sometimes used in close connection with the notion of time estimation. Lehmann had argued for a distinction between estimation and awareness on the basis that 'while time calculation and time estimation are quantitative methods, time awareness and time perspective are qualitative modes of relating to time' (p.802). For this reason, the literature consists 'mainly of descriptive and introspective accounts of this psychopathology of time' (p.802).

The concept is one with which everyone is familiar; when one is engaged in an absorbing task, time seems to pass rapidly, whilst if the task is boring, time seems to drag. Lehmann also recorded the effect of emotional colouring of events, quoting the feeling that time was moving slowly if there had been a succession of painful events.

Time perspective. Lehmann made a distinction between time estimation and time awareness, which were based on cognitive and perceptual functions modified by affective processes, and time perspective, which was 'entirely based on an affectively toned global orientation of the personality which is essentially of an existential nature' (p.806). Hoornaert's interpretation of the same point was that 'time perspective is to be considered as a dynamic basic quality of human existence' (p.268).

In Hoornaert's argument, although man lived in the present, this present constantly referred to the past and the future. Hoornaert imagined a structure in which past, present and future were ordered and situated at distances from one another defined by the situation. He emphasised that 'there is only perspective when things are seen in relation to each other' (p.269). Lehmann referred to the 'normal bitemporal orientation of man which consists in openness to the future and a grounding in the past, while at the same time taking full advantage of the present' (p.807).

The importance of perspective in considering attitude to time clearly depends on the 'global orientation of the personality', in Lehmann's words.

Discussion. From the viewpoint of this research, not all of

the above modes of time experience are relevant. As has already been mentioned, time calculation is an aspect of physical time which has little or no connection with the use which managers make of their time. Physiological time, which encompasses Fraisse's 'conditioning' and Hoornaert's 'orientation in a restricted sense', is of passing interest only to those managers whose work pattern forces them to go against the 'physiological clock'. This occurs, for instance, when long spells of work prevent rest being taken when the body and mind need it, or in cases of 'jet lag' where the apparent length of day and night changes rapidly.

Time estimation, in Lehmann's quantitative sense, seems to be principally for application in the psychology laboratory, as most of the tests require carefully controlled conditions impossible to achieve in the workplace. Most of the relationships which have been described are with specific psychological characteristics which have no obvious behavioural potential. A notable exception is the use of time horizon as a compensating factor in estimation of project completion times, as reported by Epton, by K. Green and by Milliken.

Time perspective, on the other hand, seems to be a concept with potential relationship to attitude to work. Future time perspective, particularly, would seem at first sight to be a

desirable characteristic for those whose work involves creative or planning activities. It follows that time perspective is an area in which exploration might yield promising insights and the state of knowledge in this area will therefore be examined in more detail than the other modes just described.

Section 2.2. is devoted to an analysis of time perspective and a review of some of the studies in which perspective has been related to other characteristics. The word 'attitude' occurs again in this analysis, for 'attitude towards time and time dimensions' is identified as one aspect of perspective. A review of some of the research relevant to time attitudes is offered in Section 2.3. It was one of these studies, that of Wessman, which stimulated the development of the Time Questionnaire which is described in Chapter 5.

2.2 TIME PERSPECTIVE

2.2.1 Its Multi-dimensional Nature

Lehmann (1967) defined the concept in the following words:

Our term, time perspective, denotes a person's general orientation toward the cosmic flow of time. His time perspective indicates how close he feels towards the past, present, and future, or how afraid he is of any of these temporal aspects. A

person's time perspective discloses whether or not he is living more in one than in any other of the dimensions of time (p.806).

He continued that time perspective 'is entirely based on an affectively toned global orientation of the personality'. Lehmann's own interest in psychopathology was made evident in the examples he quoted about typical time perspective of compulsive neurotics and other psychiatric patients, and also in the reference to being 'afraid of any of these temporal aspects'. The identification of particular groups of patients with a preferred time perspective, however, is entirely consistent with the more general statement of Doob:

Modally within the person, within significant groups, and within the society as a whole, one temporal perspective rather than another is likely to be facilitated (1971, p.55).

As was mentioned in Section 1.6.4, Hoornaert (1973) attributed prime importance to time perspective. His analysis of the concept is of interest. Perspective was viewed as the reciprocal relationship between past, present and future; this relationship was assessed in relation to the experiences or anticipated events of the subject, referred to as 'contents'. At different times, and using different methods, we might be interested in different aspects of perspective and Hoornaert identified five of these:

- attitude towards time and time dimensions, as studied on the level of abstract contents or abstractions from

concrete experiences;

- differential direction towards the time dimensions as a measure of the extent to which one is more directed to the past, present or future;
- density of the time perspective, conceived as the amount of contents relating to past or future;
- extension or depth of time perspective, as the length of time span connected with contents;
- Coherence, as the degree of organisation or consistency in the time localisation of the contents related to the past or the future; Hoornaert noted that this was closely related to the degree of reality - the greater the reality of the contents, the greater the coherence.

De Volder (1979) proposed that, since the literature on time perspective was so extensive, there should be a division into a number of different aspects. His suggested three aspects were described as:

- length of time perspective;
- affective attitude towards time zones;

- time orientation.

These three aspects corresponded, respectively, to Hoornaert's extension or depth, attitude, and differential direction. It is surprising that the useful concept of density was not classified, as this essentially qualitative measure has the potential to enrich a description of perspective. De Volder's use of the word 'orientation' is understandable, since one can see a convenience in a nomenclature which identifies a subject as, for example, future-orientated. Any confusion in the literature caused by the use of the same word with two meanings is fairly attributable to Hoornaert as he had also used 'orientation in a restricted sense' in a reference to a physiological clock. This latter usage will be avoided in the thesis.

Further support for the multi-dimensional nature of what they called 'future orientation' (FO) came from Trommsdorff and Lamm (1975) who emphasised that 'an investigation of FO should focus on the different aspects of FO and how they relate to each other' (p.349). A summary of 380 investigations carried out in studying any of the five aspects of time perspective classified by Hoornaert is contained in the dissertation by Vella (1977). Poor correlations in general were found between different tests purporting to measure the same attribute,

emphasising the difficulty in obtaining agreement in operational definitions between researchers. Vella's review makes clear the considerable volume of investigative work on time perspective.

2.2.2 Some Empirical Results

The diversity of empirical results reported in the literature is demonstrated by the following selected examples.

Investigating age-related questions, Verstraeten (1980) showed that the depth of future time perspective and overall level of realism among adolescents increased as the level of maturity increased. Lens and Gailly (1980) described a method of measuring extension of future time perspective and confirmed the expected inverted U-shaped relationship between age and extension. Seeking to test earlier reports that female students showed a less positive attitude to present and future than male students, Lens (1975) reported the opposite results. On the other hand Kastenbaum (1965) had found no sex differences in time directionality.

Relationships between future time perspective and student achievement have been reported by several investigators. Epley and Ricks (1963) confirmed a hypothesis that students with long prospective time span (or extension of future

perspective) achieved better grades than students with shorter spans. De Volder and Lens (1981) showed that students who achieved higher grades were in general more highly motivated and that this motivation was due to a longer future time perspective. Barabasz (1973) in a review of the literature on temporal orientation recorded two studies, one by himself and a 1958 study by Teahan, concluding that high achievers (in terms of academic grades) were more future oriented than low achievers. However both Barabasz and Teahan found no significant relationship between time perspective and intelligence. From their analysis of their tests on college students Epley and Ricks suggested that temporal orientation (direction in Hoornaert's classification) was more important than total time span (extension or depth).

In the area of motivational characteristics, several studies have related future time perspective with Rotter's internal-external locus of control or with McClelland's need for achievement. Internality on the Rotter scale was found to be related to future time perspective by Platt and Eisenman (1968) and by Rabin (1978). Agarwal and Tripathi (1980), investigating possible relationships between time perspective and need for achievement found that high need for achievement was positively associated with future time orientation and with extended future perspective. They suggested further that this future time perspective might be the cognitive make-up

needed for achievement orientation. In a study involving Master's degree students averaging 25 years of age, Evered (1977) found that their ease of imagining their future was associated with a willingness to participate and be involved in organisational issues.

In two further studies in very different fields of investigation Bouwen (1977) found that future time orientation was a good indicator of consumer behaviour; and Back and Gergen (1963) related basic attitudes towards the future to a variety of opinions about public events.

An interesting thesis propounded by Mann, Siegler and Osmond (1972) was that the four Jungian functional types had characteristic temporal orientations. In their argument:

- feeling types react primarily to past; time is continuous, circular; the present derives from the past, which encourages reliance on experience and conservatism;
- thinking types relate to linear time which flows from past through the present into the future; the continuity of the process means that past, present and future are equally related to the overall pattern;
- sensation [sensing] types relate to the present; time is

regarded as discontinuous so the emphasis is on practical responses to environmental stimuli;

- intuitive types also regard time as discontinuous, not integrating past experience into the present and treating visions as reality; an interesting consequence is that:

the actual direction of time's flow is, in their experiential world, backward. The intuitive first experiences the future and then is constrained to return to the present and wait until chronological time has caught up with his vision. (p.171)

Evans (1976) based a study on the premise that an individual's temporal orientation and personal orientation are related. He sought to demonstrate this relationship by establishing the temporal orientation of subjects from each of the Jungian types, in the belief that temporal additions to the psychotypology developed by Mann et al. would add predictive and descriptive value. With limited significance attached to his hypotheses, Evans was able to say only that 'an individual's approach to events and his temporal orientation are logically compatible' (p.116). Evans has spoken on behalf of many researchers in this field in stating:

The complex interplay of numerous and partially understood variables in temporal orientation remains a major limitation in this study (p.21).

A potentially interesting study by Garfield (1975) reported an attempt to relate five different factors, including temporal orientation, with psychological differentiation. In reporting the generally inconclusive findings, she was moved to admit that: 'due to inherent weaknesses in the instrument . . . these findings with the Temporal Reference Inventory [of Roos and Albers] cannot be viewed as conclusive' (p.49).

Kastenbaum (1965) had earlier argued from circumstantial considerations 'that future directionality should enjoy a preference over past directionality' (p.194), and his results showed a preference of this kind in respect of future direction of thought. However, his results suggested that it is 'pastness' which constitutes the most variable element. His discussion includes a salutary reminder about the meaning of the concept of time perspective:

If we take seriously the 'perspective' in 'time perspective', then it is apparent that there must always be at least two reference points and a relationship between the points. A person who thinks exclusively of the future, for example, does not have a strong future time perspective - he has no time perspective at all. It is the person who manages to keep past, present, and future in mind who has the opportunity of developing a genuine perspective (p.199).

2.3 TIME ATTITUDES

2.3.1 General Comments

It is an interesting semantic commentary on the subject of this thesis that it is necessary to use a sub-heading 'time attitudes' within a chapter entitled 'attitude to time'. This arises because the word 'attitude' is an example of the large number of words in the English language which have a generally accepted meaning for the population at large, but which have been used by specialists to mean something quite specific within their specialism. In the case of the word 'attitude', the difficulty is that various specialists have given their own meaning to the word without agreement with one another.

Reference was made in Section 1.6.2 to the pervading significance which Fraisse (1964) attached to the word, suggesting that it was a composite of experience, its context and personality. A very much more restricted meaning is implied by Hoornaert's (1973) use of attitude as one of five aspects of time perspective. Yet Hoornaert's classification was derived to allow research on various aspects of time to be subdivided in some sensible way, with like studies being grouped together. When research into attitudes is undertaken, operational definitions will necessarily be used to enable some instrument of assessment to be determined. Although the

research quoted by Hoornaert concerns the narrower meaning of the word, interpretation of the results can often be generalised in a sense not dissimilar to Fraisse's usage. In the present research this objective has been pursued: to obtain measures of attitude using a specific instrument and then to interpret these measures in a broader sense.

Even in its narrower meaning, Hoornaert conceived a variety of aspects of the term:

The attitude towards time and time dimensions can be optimistic or pessimistic, positive or negative, active or passive and this according to different degrees . . . The attitude towards time and time dimensions is studied on the level of abstract contents or abstractions from concrete experiences (p.273).

He then described the principal method used by researchers. In the 1930s Israeli was credited with the first systematically empirical studies of time perspective and time attitude. His methods required qualitative interpretation which presumably made the reliability of his findings suspect. Most of the studies which have been reported more recently have been based on questionnaires, although semantic differential technique has been employed in studying attitude to the time dimensions of past, present and future. Four studies which appear to have relevance to the present research are now described, three of them based on questionnaires and the fourth based on interviews. The third of these, by

Wessman, is of particular interest and will be treated in some detail.

2.3.2 Knapp

In the introduction to the report of his study, Knapp (1962) commented that 'the mastery and management of time in large degree determines the effectiveness with which the individual is able to cope with his environment'. Yet he noted that 'there have been comparatively few studies of individual differences in time awareness' (p.79). Two tests involving seventy-seven male college undergraduates were conducted.

The first test described in this report was a questionnaire consisting of two sections, the first having ten items describing actual practices respecting the managing of time and the second containing thirteen items dealing with attitudes toward time. After correlating all twenty-three items Knapp deleted those with very low correlations with all the others, leaving seven items from the 'practices' scale and ten from the 'attitudes' scale.

Factor analysis of the seventeen items remaining yielded two factors, each containing items strongly loaded on that factor but with small loadings on the other factor. Four items which were loaded highly on both factors were not included in the

factor structure, which finally emerged as:

Factor I containing eight items (six 'attitudes' and two 'practices') all loading more than 0.3 on Factor I and less than 0.16 on Factor II. Six positively loaded items expressed a feeling of harassment with the passage of time together with an effort to manage and control it. The two negatively loaded items suggested 'an Olympian unconcern with time' (p.81). Knapp described this factor as the 'time servant-master' dimension.

Factor II containing five items (four 'practices' and one 'attitude') all loading more than 0.37 on Factor II and less than 0.12 on Factor I. The two positively loaded items described 'time efficiency' and the three negatively loaded items 'time obliviousness'. Knapp noted the absence of clear affective feeling toward time in this factor, which is inevitable with but a single item from the 'attitude' scale.

The second test reported by Knapp involved the sorting of

thirty lithographic reproductions of Scottish tartans, selected to include a variety of colours. Subjects were required to sort these into six groups of five each according to their aesthetic appeal. The preference ranking assigned to each of the tartans was then correlated with the factorial score of Factor I from the first test and it was observed that the predominant colours of the ten tartans with the highest correlations were blue and green, whilst for the ten tartans with the lowest correlations the predominant colours were red and yellow.

Finally Knapp compared the rank ordering of tartans from these correlations with orderings based on correlations with three other variables : need for achievement; science interest, based on the Strong Vocational Inventory; and underestimation of time. In all cases he found significant correlations which led him to the conclusion that there is a roughly similar pattern of aesthetic preference associated with four variables in expressing preference for 'somber blue-green designs' over bright red and yellow designs, the variables being:

1. the tendency to be harassed by time and to seek to control it;
2. high achievement motivation;
3. interest in science and technology; and
4. the tendency to underestimate time intervals in

calculating the progress of a moving target.

Knapp speculated that these results were consistent with his theoretical hypothesis based on the historical analysis of the rise of North European Protestantism, which was quoted in Section 1.6.3. He concluded his discussion by contending 'that there are coherent and persuasive psychodynamic reasons for the intercorrelation of the several qualities which we have identified with the "Puritan pragmatic character"' (p.86).

Critique. Knapp's choice of tartans to assess aesthetic preference is imaginative. He could counter any criticism of the highly subjective nature of the test by pointing to the statistical analysis of rank order or preference, which enabled correlations with other measures to be calculated. Reservations must be expressed about the items selected for the questionnaire. Knapp did not comment on their derivation but they do not appear to be a fair representation of either time practices or time attitudes. In particular:

- of the seven final items on the 'practices' scale, three mention 'watch' or 'clock', one refers to time of arising and one to early arrival for appointments; five items out of seven based on time consciousness and punctuality seem to be out of balance;

- of the ten final items in the 'attitudes' scale, two mention 'guilty', two 'anxious' and there was one mention for each of 'annoy', 'trouble', 'slave' and 'waste'; again the balance between inviting negative and positive thoughts by the questions on attitudes seems unfortunate.

Summarising, it can be said that the relationships which have emerged from the study appear to be well justified and that these conclusions are interesting. However, the reservations expressed on the selection of items on the questionnaire, together with the highly subjective nature of the tartan test, mean that neither test is suitable for the present research.

2.3.3 Calabresi and Cohen

The relevance to the present research of the study by Calabresi and Cohen (1968) is the authors' belief that it 'would illuminate the relationship between personality structure and orientation to time . . .' (p.431). The subjects were 308 college students together with 200 hospital or clinic patients comprising a neurotic group, a borderline group of whom some suffered personality disorders, and a psychotic group. The instruments used were questionnaires based on Likert-type format with a six-point agree-disagree response continuum. Forty-five items were included in a set pertinent to personal experience and attitudes not related to

time; forty-six items formed a second set specifically pertinent to time experience and attitudes.

Factor analysis revealed an eight-factor structure, with four factors from each set of questions. The four factors from the personality set were named: restless dysphoria, extraversive adjustment, tense dependency and excitement seeking. The four time factors were: time anxiety, time submissiveness, time possessiveness and time flexibility. A brief description of the time factors will assist comparison with other studies.

- Time anxiety was a large factor containing sixteen items loading above 0.33. Characteristics of the positive pole are anxiety about the flow of time and the need to control it ('It makes me a little uncomfortable to think about my future'). There were no negatively loaded items.
- Time submissiveness was a factor containing eight items loading above 0.32 reflecting an extremely dutiful and conforming attitude toward time ('I am almost never late for work or appointments'). Of the eight items, three were negatively loaded ('I often put things off to the last minute and then rush to get them done on time').

- Time possessiveness was described as a weak factor containing six items loading above 0.26, and reflecting a 'greedy' attitude toward time ('I wish I would live long enough to see what the world will be like 100 years from now').
- Time flexibility contained nine items loading above 0.26, incorporating wondering about the past or fantasizing about the future ('It is fun to talk over your younger years with old friends').

Interpretation. In examining the factor scores, the authors found that the factors related in pairs in the personality set. In the first pair restless dysphoria with its feelings of frustration and passivity predominated over tense dependency; in the second pair extroversive adjustment and the search for excitement were related. In the set of time factors, anxiety about time was related to a possessive attitude. The other two factors were unrelated to the others. Between the sets there were several instances of high correlation, in particular:

- time anxiety with time possessiveness , restless dysphoria and tense dependency;
- time flexibility with extroversive adjustment and

excitement seeking.

The authors commented that the first of these groups, described as 'the strongest [sic] of the two constellations' suggested that:

. . . anxiety about the flow of time, need to control time, and fear to be deprived of time are the predominant time attitudes of those who[:] experience to a high degree feelings of emptiness and frustration, lack of self-confidence and initiative, are dependent on old habits, and seek direction and protection from others (p.436).

It is clear from the care with which sub-samples were selected and cross-analysed that Calabresi and Cohen were concerned primarily with the hospital and clinic patients. Results of most of these cross-analyses do not concern this review of the study because of their concentration on diagnostic issues. One result which was relevant was that time flexibility, together with three of the personality factors, differentiated between male and female college students, although the direction of the difference was not reported. Time anxiety and time submissiveness were significantly higher in less educated clinic patients. One of the few examples of significant relationships of the factors to age was the negative relationship of excitement seeking to age, particularly for the college students. This correlation was in the expected direction.

In their discussion the authors expressed satisfaction with the results in these words:

The constellations of factors emerging from the two sets and the findings reported bring empirical support to the long-held conjecture that attitudes towards time reflect basic features of the individual personality. . . . Sex differences for college students are strikingly more apparent in the personality factors than in the time factors (p.439).

Critique. From the viewpoint of this research, this study is useful mainly because of the general support given to the relationship just quoted between attitudes towards time and basic features of individual personality. The four time factors which were derived are also of interest in themselves.

Little is said in the report about the way items were selected for interpretation in one of the eight factors. From the fact that four of the items in the personality set were unused and seven of the items in the time attitudes set, one assumes that these failed criteria which were not reported. One would normally expect some items to be rejected either because of low loadings or equally high loadings on more than one factor but no reasons were given. The authors allowed a number of low-loaded items, including eleven of the forty-one in the personality set, and seven of the thirty-nine in the time attitudes set, which loaded less than 0.32, representing 10% of the variance. (For a discussion on criteria for inclusion, see Section 5.3.1). This may be thought to weaken somewhat

the interpretation given to this factor structure.

Statistical considerations apart, it is clear that the study was conducted in order to give information which would be useful in devising treatment regimes for mental patients. Although the sub-sample of students was substantial (n=308), this sub-sample was treated almost like a control, with little analysis other than male-female distinctions. In conclusion, this study appears relevant to this research, but offers less in the way of relationships with personality variables than the Wessman study, described in Section 2.3.4.

2.3.4 Wessman

A study by Wessman (1973) was based on the view

that characteristic ways of experiencing and utilizing time vary greatly among individuals along dimensions that can be assessed and measured, and that these differences are meaningfully related to personality characteristics (p.103).

Wessman described the development and application of a Temporal Experience Questionnaire (TEQ). The interpretation of the results reported in his paper and their relationship with known personality variables are so relevant to the present research that his work will be described in some detail.

The original TEQ had 201 items

concerning various ways of experiencing, arranging and using time in work; daily activities and fantasies were rated by subjects in terms of the degree to which they were characteristically disposed, or not disposed, to engage in them (p.103).

This questionnaire was administered to 110 subjects and the results were subjected to factor analysis. The subjects were undergraduate students, predominantly male, 93 attending Harvard and Massachusetts Institute of Technology summer schools and 17 participating in a three-year research project at a Harvard clinic.

Seven orthogonal bipolar factors emerged, of which four were readily interpretable. The final questionnaire was constructed from the ten most positively loaded and the ten most negatively loaded items on each of the four factors, giving eighty questions in all. The four factors, with a description of the polar extremes were:

Factor I - Immediate time pressure:

harassed lack of control vs. relaxed mastery
and adaptive flexibility.

Factor II - Long-term personal direction:

continuity and steady purpose vs. discontinuity
and lack of direction.

Factor III - Time utilization:

efficient scheduling vs. procrastination and
inefficiency.

Factor IV - Personal inconsistency:

inconsistency and changeability vs. consistency
and dependability.

A list of the full eighty items is shown in Appendix 2.1.

The questionnaire was administered with a 7-point Likert-type scale beside each item, so that subjects could score the degree to which they were characteristically disposed (+1, +2,

+3) or not disposed (-1, -2, -3) to act and feel in the way indicated in each statement. The items were presented so that those loading on factor I positive were numbered 1, 9, 17 etc.; those on factor I negative were 5, 13, 21 etc.; those on factor II positive were 2, 10, 18 etc. and so on. Scores on each factor were obtained by subtracting the algebraic sum of the scores on the ten negative items from the algebraic sum of the scores on the ten positive items. Negative figures were avoided by adding a constant of 60 to each factor scale.

Interpretation. The seventeen students who participated in the three-year personality assessment and research project at the Harvard Psychological Clinic provided personality data which were used to interpret the factors from the questionnaire. During their project these students filled out many standardised personality inventories, including the Sixteen Personality Factor Questionnaire (16PF) and Minnesota Multiphasic Personality Inventory (MMPI), as well as many other inventories on individual topics; they completed several other tests such as the Rorschach and the Thematic Apperception Test (TAT); they wrote lengthy autobiographies and frequent self-reports during a mood study; and they were interviewed on experiences, self-concept and attitudes. At various points during the three years they were also assessed by the staff psychologists and ranked on such characteristics as happiness, identity, alienation, repression and

neuroticism. As part of the data analysis 365 scores and ratings from these measures were intercorrelated.

In using this information Wessman reported that only statistically significant results were considered, significance at the 0.05 level for seventeen subjects on the two-tailed test requiring a correlation of at least 0.48. Only strong evidence for indicated relationships from a number of measures was admitted in the interpretation. Wessman's interpretations of the four factors were, in summary:

Factor I - immediate time pressure. High scores related to emotionality, apprehensiveness and nervous tension, imagination and sensitivity. Low scores related to confidence and calmness, resiliency and toughness, an ability to cope with stress, and a rather conventional, unimaginative and realistic nature.

Factor II - long-term personal direction. High scores were associated with self-esteem, happiness and general elation, enjoyment and satisfaction with life. Low scores suggested unhappiness, low self-esteem, depression and pessimism, being poorly socialised and emotionally shallow.

Factor III - time utilization. High scores indicated precision and orderliness, confidence, initiative and

industry, with frequent peaks of tranquillity and freedom from worry. Low scores suggested an individual who was undisciplined, careless and disorderly, indolent and casual, vague and imprecise, showing lack of confidence, inferiority and seldom free from anxiety.

Factor IV - personal inconsistency. Individuals with high scores tended to be unstable, ready to accept impulses without reservation, impulsive, undisciplined and low on self-control. Those with low scores were more cautious and restrained, deliberate and self-controlled, emotionally stable, calm and steady.

In the discussion of the results, Wessman acknowledged that the small number of students who contributed the detailed personality data was insufficient for any firm conclusions to be drawn, and he described the study as an 'exploratory investigation'. He stated:

The temporal experience factors that emerged were highly consistent and made conceptual sense; and their psychological correlates found in the personality assessment data appeared congruent and meaningful. The expectation that the personal experience of time has features that are significantly related to individual psychodynamics appeared confirmed in this relatively small scale study (p.112).

Admitting that the group of students used was highly selected and atypical, Wessman suggested that 'long term programmatic

research' would be required to establish fully the structure which this study suggested.

Critique. The conceptual elegance of four bi-polar orthogonal factors is very beguiling; experience suggests that this must have been a singularly lucky result, particularly as only 110 subjects were used to examine 201 items. This case per item ratio seems unsafe; normal guidelines suggest a ratio of not less than 2:1 (Elliott, 1983). Three attempts were made by the present writer to contact Wessman personally in order to clarify two questions - the cases per item ratio and the actual item loadings on the four factors - but no reply was forthcoming. This was surprising as well as disappointing, particularly in view of Wessman's reference to the need for further research to confirm or refine his findings.

In this sense the author must also regret the small number of citations the paper has received. Most of the references to the Wessman paper have compared his factor structure with concepts such as time perspective or need for achievement. No reference has been found in the literature to the confirmatory or refining research which Wessman hoped would ensue. One specific study which is relevant to the present research was reported by Thayer, Gorman, Wessman, Schmeidler and Mannucci (1975). In their study scores obtained by eighty-nine undergraduates on the TEQ were compared with scores on a

personal control sub-scale of the I-E locus of control scale. Correlations in the expected direction were obtained.

In spite of the reservations expressed above about the statistical reliability of the factor analysis and the small number of students providing the personality data, the conclusions drawn in the paper are conceptually satisfying and closely relevant to the theme of the present research. It was decided that empirical testing of the TEQ should be the initial step in developing the strand of this research concerned with attitude to time. This study is described in Section 5.2.

2.3.5 Dapkus

A more recent study by Dapkus (1985) deserves mention because of its objective to put such notions as time urgency and future time perspective into a broader theoretical context. Dapkus identified three basic conceptual categories from what she described as a 'naturalistic, descriptive approach' (p.408). Her method was to interview twenty mature subjects and to extract thematic units appropriate to the subject matter from the verbatim transcripts of the interviews. A description of the three major categories of temporal experience is as follows:

- 'Change and continuity' refers to the fact that things are constantly changing but yet have continuity in time. Notions of perspective are included in this, which is described as a category of 'becoming' in time.
- 'Limits and choices' refers to the choices people make about how to spend their time and to the limited amount of time available. This is described as a category of 'doing' in time.
- 'Tempo' refers to the speed or pattern of movement in time. This is described as a category of 'pacing' in time.

In setting out the method by which the individual units of experience were coded, Dapkus pointed out that a single unit could refer to more than one category. One example of this is:

My husband doesn't feel as rushed as I do; he's more relaxed, he takes it in [his] stride if time runs out. He can say, 'That's all I can do, that's that', but I'd be trying to cram in one more thing (p.414).

In this example the 'limit' of time running out and the 'tempo' of being relaxed are both implied and Dapkus coded such units in 'second-order categories'. With three second-order categories and one of third order (all three categories implied in the one unit of experience), there were seven

possibilities for classifying units. Taking all units of experience from all twenty recorded interviews, Dapkus reported that 63.42% referred to 'change and continuity', 82.24% to 'limits and choices', and 52.57% to 'tempo'.

A further refinement was introduced to classify separately two essentially similar statements which referred, because of the context of the statement, to different aspects of experience of time. In the same way two apparently different statements could refer to the same aspect. Four different categories were chosen to facilitate this distinction, the categories concerned having their origins in the phenomenological literature: 'the self world in time'; 'value and moods about time'; 'the body in time'; and 'time in culture'. This refinement allowed the original categories to be described more fully, and Dapkus gave many examples to support this process.

The breadth of the original categories introduced by Dapkus almost guarantees that at least one of them will be implied by any experience of time. She quoted a number of studies and classifications which she was then able to relate to her own categorisation. Apart from the obvious relationship between research on time perspective and her category of 'change and continuity', she related the four factors of Wessman's (1973) study, discussed in Section 2.3.4, to her categories as

follows:

- Wessman's 'immediate time pressure' and 'time utilization' factors clearly relate to 'limits and choices' and 'tempo'.
- Wessman's 'long-term personal direction' and 'personal inconsistency' relate to 'limits and choices' and 'change and continuity'.

Critique. Dapkus acknowledged that so much content derived from only twenty interviews because the subjects were all mature and highly articulate. She also recognised that the distribution of units of experience among her three categories also depended upon the make-up of the sample, and that a different sample might yield a very different pattern. One thing this study does show is the potential in terms of content which resides in a well-conducted interview. Although the present research was far advanced before this paper became available, and so was not influenced by it, the conceptual pattern which Dapkus derived is a very interesting one.

2.4 DISCUSSION

The implication of the title of this thesis, 'Explorations in managers' attitudes to time' is that it will be treated very broadly. As has been shown, treating the word 'attitude' broadly leads to a canvas at once vast in size and, because of the inter-relations between different aspects of the subject, very complex. This survey of the present state of knowledge of the field is, therefore, highly selective. As has already been explained, one criterion used to determine whether a particular aspect of attitude to time should be investigated is whether it has the potential to influence behaviour. The selectivity referred to, however, is not that of the microscope, examining a very small field in great detail; rather is it one of sampling of fields, not randomly but with common links to actual behaviour of managers.

The vast size and great complexity are emphasised simply by considering those antecedent conditions which have given rise to certain attitudes. Clearly in the development of the individual from infancy to adulthood there are direct influences arising from what one has actually been taught. Perhaps equally important are those influences which are related to culture and which indirectly have a considerable bearing on the development of attitudes. Culture needs to be considered in its broad sense of national or religious mores;

but probably the more powerful influence is culture in its narrower sense, of family, neighbourhood and workplace. Culture is described here as having an indirect effect on attitude because the influence is largely unconscious.

One consequence of the indirect and unconscious influence is that individuals will differ markedly in the relative strength of the effects caused by it. This truism is reflected in Fraisse's (1964) perceptions which 'are a function . . . of the assumptions with which we apprehend' stimuli and in Sherover's 'selectivity of perceptual focus' (Section 1.6.2). Children brought up in the same family may show selectivity in that one may be obedient and another disobedient; children in the same class may differ in that some may develop a liking for science experiments calling for exactness and others an enthusiasm for artistic creativity, with probably differences in their attitude to time. If these differences can attend similar teaching, then we may assume that differences will be at least as marked under the more indirect influence of culture. These links between cultural environment and interest in the nature and measurement of time were suggested by Knapp (1962, see Section 1.6.3).

It is in this sense that Doob's (1971) model based on a set of potentials is particularly helpful in understanding the differences which have been described and which one can

observe in everyday life (Section 1.6.5). Both temporal potential and behavioural potential will vary as between individuals, depending on their manner of perceiving stimuli and making judgments. Doob's taxonomy (illustrated in Figure 1.4) indicates the variety of aspects of potential, both temporal and behavioural, which combine to produce the complexity, and the richness, of temporal behaviour.

The search amongst this richness and complexity has been narrowed in the present research to those aspects of attitude to time which are likely to have an influence on temporal behaviour. Using this criterion, time calculation and time orientation 'in the restricted sense' (Section 2.1) are abandoned. Time estimation, although it has attracted a great body of research, seems to be regarded predominantly as a dependent variable, which reduces its value from the viewpoint of this research.

Time perspective, to judge from much of the empirical work which has been reported, can be shown to be related to a number of dimensions of personality. On the other hand the conclusion reached by Evans (1976) and described in Section 2.2.2 was that it was difficult to say more than that 'an individual's approach to events and his temporal orientation are logically compatible'. In spite of this cautious appraisal, the concept of time perspective remains an

attractive one. Its final abandonment for use in the present research was based on the fact that measurement depends upon the Thematic Apperception Test (TAT), a projective technique which is held to be inappropriate to the subjects taking part in this research (see Section 4.3.2 and 4.3.5).

It is in the field of time attitudes that are found wide-ranging instruments which seem to be in tune with the aspirations of this research. The studies described in Section 2.3, and particularly that of Wessman (Section 2.3.4) seem to match the concept of attitude to time which grew out of an early survey (Section 5.1). The self-report methods which are involved, for all their imperfections, have advantages peculiarly suited to the stance adopted in this research, as discussed in Section 4.3.3.

CHAPTER THREE

PERSONALITY CHARACTERISTICS

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3.1 INTRODUCTION

In Section 1.2 the second of the aims of this research was stated as:

- to investigate different personality attributes which may influence attitude to time and to administer a selected instrument to a sample of managers.

As was pointed out in that section, an investigation of personality attributes is complex, partly because of the wide variety of theoretical perspectives which have been advanced. In this chapter a brief survey of the principal theories of personality is given and the potential of each to provide the most appropriate attribute is discussed.

It was in social learning theory that a suitable conceptual framework was found. The final selection was strongly influenced by the existence of a simple but powerful measure, Rotter's internal-external locus of control scale, which has been widely applied and validated. A feature in its selection, however, was the controversy surrounding the dimensionality of the scale, a controversy to which it was thought that the present research could contribute its findings.

First, the search for a personality attribute needs to be put into context. The purpose underlying the whole project is 'trying to help managers to find a way to improve their own time management performance' (Section 1.1) which is a specific act of behavioural self-modification. Therefore the individual variable which is being sought needs to have the potential of influencing behaviour.

When the behaviour of managers is being studied, the model proposed in Mintzberg's contingency theory of managerial work (1973) is helpful. As was pointed out in Section 1.5.3, the work a manager does, according to this theory, is determined by environmental variables, job variables, person variables and situation variables. Before concentrating on person variables, which is the main focus of this chapter, the influence of the other three variables will be considered.

Environmental variables, characteristics of the employing organisation and the industry, can affect the attitudes and behaviour of employees in a variety of ways. In extreme conditions, such as major retrenchment with consequent threat of redundancy as has become widespread during the 1980s, low morale commonly reduces time-consciousness to a very low priority. On the other hand, rising business aspirations and expansion often cause an enthusiastic approach to the use of time. Personal experience suggests that this enthusiasm, with

the associated determination to make good use of every hour, is characteristic of many small organisations. Very large organisations, partly because of complex administrative procedures and controls, are often associated with a slow-moving and ponderous attitude to work. The influence of culture on behaviour, as reported by Knapp (1962), Doob (1971) and Fraser (1981), was discussed in Section 1.6.3; cultural influence in these terms operates in much the same way as Mintzberg's environmental variables. The extent of these variations has received little attention from researchers into attitude to time, the Horne and Lupton study (1965) referred to in Section 1.5.2 being one exception. The possibility that in some cases their effect will be substantial must be borne in mind when experimental results are analysed.

Job variables are known to exert considerable influence on work patterns. Horne and Lupton (1965) found that their results differed little as between different industries or between firms of different size, suggesting that differences in results corresponded with job variables. The fact that there were also marked differences between responses from managers within the same category, however, points to the influence of person variables. Hemphill (1960) was also able to establish profiles for particular positions, but again managers holding the same positions reported divergent results. One possible conclusion is that the principal

influences are related to the specific job being studied, rather than the generalised status of a position. Alternatively, the influence of person variables may be significant but these were not identified in either the Horne and Lupton or the Hemphill study.

The influence of job variables on temporal behaviour was shown in some of the studies referred to in Section 1.5 where comparison between jobs was made. Two examples are Copeman (1963), who found differences between chief executives and departmental heads, and Webber (1972), who tabulated results separately for operating supervisors, service managers, functional control managers, staff specialists, sales managers and general executives. In the study by Stewart (1976) comparisons between occupants of different posts were analysed in considerable detail, aided by the model which was developed during the research for the book - the deceptively simple model of the three elements of managers' jobs: demands, constraints and choices. These identify respectively what must be done, what must not be done, and what may be done.

Noting that some of the questions on the questionnaire developed by Stewart for the 1976 book related to matters to time, the present writer administered an abridgement of the questionnaire to 535 managers of senior or middle-management status, analysing the results according to the industry type

and the size of the employing organisation, as well as occupation, using the Directory of Occupational Titles of the Department of Employment. As the report on this study was never published, a copy is shown as Appendix 3.1. Although the analysis showed some of the differences one might have expected from the demands of the different jobs, it was suggested that the remaining unexplained variation was consistent with the assumption that individual differences between the respondents could be greater in influence than job demands.

Person variables. Although the researcher's Job Demands Study was based purely on questionnaire returns, unsupported by the qualitative data provided by interviews, it serves to underline the importance of Stewart's third element, choices, in the analysis of managers and their jobs. Essentially this element refers to the individual manager's discretionary decisions which can be regarded as identical with Mintzberg's person variables. The variation in choices as perceived by different managers holding what may appear to be the same job in a national public service was clearly revealed in the survey by Stewart, Smith, Blake and Wingate (1980) of district administrators in the National Health Service.

Situational variables include temporal features such as seasonal variation or any cyclical patterns - indeed 'a host

of time-related factors' (Mintzberg, 1973, p.130). These variables certainly affect what a manager does at any particular time but Mintzberg does not seem to have made a case for considering seasonal variables separately from job variables, of which they appear to be an inseparable part.

Discussion. Correctly an analysis of the effect of any variable should be carried out with all other variables held constant. There seem to be two principal reasons why the task of the researcher into the job of the manager is difficult. The first is that in any random sample of managers, which would have to be used if generalised conclusions were desired, the wide range of variation possible makes it difficult to obtain a reasonably sized sub-sample with any variable held constant. The second is that there are still fine distinctions, for example, between jobs which may appear the same and these distinctions can still have a disturbing effect. Both Hemphill and Horne and Lupton found variations in results which could be attributed to these fine distinctions between jobs.

Environmental variables similarly are subject to fine distinctions in the same way as job variables. For example, a manufacturing company may be affected by a sudden increase or decrease in orders placed by a major customer, yet the effect will be felt much more by some departments than by others. A

change in the control of an organisation can suddenly and considerably affect its culture and even its acceptable working practices; a change of government at national or local level has a profound impact on public services in many ways. These events make the notion of holding environmental variables constant similarly unworkable.

The scope for investigative work on any of these variables is attractive but, because of the difficulty of holding any of them constant while the effect of others is being studied, traditional hypothesis testing is unlikely to yield results which are truly reliable. From the viewpoint of the present research, the study of person variables offers the greatest inducement. The findings from any explorations, however, will need to be couched in terms which acknowledge the effects of variations in environmental and job variables.

3.2 DEFINING PERSONALITY

Harré (1976) suggested that there were four concepts in understanding individuals: the person, the self, the personality and the character. The distinctions he made between these four concepts will help to set comparisons with definitions from other sources into context. He described the concepts as follows:

- the person - the embodied self, the social individual;
- the self - the individual as a psychic unity of sorts;
- the personality - the way a person's public presentation of himself is seen as invariant by those who interact with him in different situations;
- the character - the supposed underlying qualities that are ascribed to a person in the course of his acquiring a public reputation (p.vii).

Harré further commented that character was sometimes thought to be the foundation of personality and also of the style used in a person's interaction with others.

In an earlier book, Allport (1963) advanced two definitions, one which could be termed technical and the other a simpler form of words which differed from Harré's view:

1. Personality is the dynamic organisation within the individual of those psycho-physical systems that determine his characteristic behaviour and thought (p.28).
2. Personality is what a person 'really' is, regardless of

the way other people perceive his qualities or the methods by which we study them (p.35).

Allport appeared to be self-contradictory in stating that personality determined 'characteristic behaviour' but was not related to 'the way other people perceive his qualities'. One might think that observing a person's characteristic behaviour was a way to perceive his qualities. In referring also to personality determining thought, Allport included a cognitive aspect similar to what Harré treated separately as 'self'. What is common to the two approaches, and of significance in this research, is the link between personality and behaviour. As Alston (1976) defined the term:

Personality, whatever else it is, is what is contributed by a person to the determination of behaviour (p.91).

A similar view was expressed by Kleinke (1978) in pointing out that in all theories of personality it was the inner personality and its underlying dynamics that served as the primary explanation for human behaviour.

Argyle (1972) proposed a different classification of individual differences from Harré's: abilities, interests and motivation, and patterns of social performance. Argyle supported his classification of the last-mentioned as a dimension of personality rather than an aspect of behaviour by

describing it as 'partly a matter of temperament . . . but also a question of styles of social performance in different social situations' (p.54). The suggestion of individuals possessing their own styles of social performance is very similar to Doob's (1971) reference to 'behavioural potentials' (see Section 1.6.5).

As stated in Section 1.1, the ultimate objective of the research programme detailed in this thesis is 'to help managers to find a way to improve their own time management performance'. To explore aspects of personality which may be related to temporal behaviour is a major theme in this research.

3.3 PRINCIPAL THEORIES OF PERSONALITY

In searching for an individual variable in a complex field such as the study of personality, it has been necessary to be aware of the main lines of development of theory. In order to select for further study an appropriate area, the principal theories have been reviewed. They are described briefly in this section with some comments on their relevance to the focus of this research.

3.3.1 Psychoanalytic Theory

Freud has been credited with having developed the first complete and systematic theory of personality. Harré and Lamb (1986) (1) have pointed out that there are two main strands in the theory: a 'dynamic' theory of an 'instinctual drive whose satisfaction or frustration at different stages of a child's development gives rise to particular traits or dispositions' (p.254); and a 'structural' theory of how various mental functions interact. It is described by Forgas and Shulman (1979) as a 'hedonistic theory' because it explains 'the individual's struggle to satisfy his/her drives in the face of social constraints' (p.22). According to the structural strand of the theory the mind is made up of three systems representing unconscious, rational and evaluative mental functions.

Freud's propositions were based on careful observation, principally of his patients. However, as Kline (1981)

Note 1. Although the many individual contributors to Harré and Lamb's Dictionary are identifiable by initials after their entries, all references to the Dictionary in this thesis will be attributed to Harré and Lamb.

pointed out, poor sampling and the lack of statistical analysis, together with the ambiguity and vagueness of his concepts, are legitimate objections to the theory. Nevertheless, psycho-analytic theory can be regarded as a collection of sets of testable hypotheses, many of which have been validated. Because of its concentration on the development of personality in children, the theory has little relevance to the present research.

3.3.2 Trait Theories

A trait has been defined by Harré and Lamb (1986) as 'a characteristic of a person or animal which varies from one individual to another' (p.364). Traits may be physical (such as height or eye colour) or psychological (such as intelligence or aggressiveness). They are conceived as reasonably stable and enduring attributes, as distinct from states, which are temporary behavioural predispositions.

Very many traits have been identified by researchers in this field (Harré and Lamb have quoted an estimate of 4500 trait-descriptive adjectives in the English language). Using factor analysis, psychologists normally reduce this number into 'primary level' factor clusters; because these are themselves inter-correlated, the number can be reduced further to a smaller number of 'higher order' factors which are reasonably

independent. Cattell's Sixteen Personality Factor Questionnaire (16PF) is a well-known instrument based at the primary factor level. The Eysenck Personality Questionnaire is based on three major composite dimensions which are largely independent of one another: extraversion/introversion, neuroticism/stability, and psychoticism/empathy.

Although traits are defined as 'reasonably stable and enduring' it is found that they are situation-dependent. Allport (1963) has observed that:

situational determinants are most important where duties and roles, where tasks and functions, are heavily prescribed. Personality determinants are most important where the task is more free and open and unstructured' (p.179).

Mischel (1973), who has expressed many reservations about the validity of trait theory, has also referred to situation-dependence, claiming that situational factors are very important determinants of behaviour. In supporting a cognitive social learning approach (to be discussed below) he stated his reasons in these terms:

The focus shifts from attempting to compare and generalize about what different individuals 'are like' to an assessment of what they do - behaviorally and cognitively - in relation to the psychological conditions in which they do it (p.265).

In the same vein, Forgas and Shulman (1979) pointed to the

limitation that 'knowing the trait does not necessarily tell us how or when that person will display it' (p.11). A cautionary note about the use of trait theory has been offered by Argyle (1972):

The traditional approach . . . has been to look for correlations between personality traits and measures of work performance. Recent research has shown that the relation between personality and work behaviour is more complicated than this. In the first place, behaviour may depend in a complex way on a number of traits in combination. Secondly, the model of general traits which has worked so well in the field of abilities does not work so well in the fields of motivation or social behaviour, where the same person may behave quite differently in different situations (p.52).

Argyle himself favoured what he called an 'interactionist approach' which he based on work by Lewin in the 1930s (1976, Chapter 6). The model he supported was

$$B = f(P,S)$$

linking behaviour, personality and situation.

Mischel's condemnation of trait theory has itself been attacked by Alston (1976), who sought to demolish specific arguments in Mischel's writing by showing inconsistencies between his preferred approach and his arguments against the traditional view. Taking Mischel's preferred focus of 'an assessment of what they do', Alston argued that a subject

might have a highly developed ability which was very rarely used, and might have needs which were not observable, and thus difficult to classify in Mischel's model. In supporting his own preferred purposive-cognitive theory, Alston continued:

Intentional action is undertaken in order to reach certain goals, the particular means employed being a function of the agent's beliefs as to what, in the current situation, is most likely to attain that goal (p.70).

Although traditional trait theory has been criticised by some psychologists for reasons similar to those outlined above, it is well to remember that personality description according to one of the standard instruments like the 16PF or the Eysenck Personality Questionnaire is still frequently used. Studies with children have shown that emotional tendencies identified in infancy are useful predictors of later childhood behaviour (see for instance Harré and Lamb, p.365). However, the doubts expressed about the ability of trait theory to predict behaviour at work make instruments based on traits less attractive for the purpose of this research.

3.3.3 Quasi-mechanical Theory

Research in animals has given rise to the stimulus-response approach to human personality study. According to this approach, the operation of drive is in the form of tension reduction, and all motivation is a pressure toward reduction

of tension. An alternative view is to admit of pleasure seeking and so the theory is hedonistic. However, Allport pointed out that some authorities such as Kluckhohn, Murray and Schneider said that people sought not a tensionless state, but the process of reducing tension (Allport, 1963, Chapter 5).

According to this theory learning takes place through a process of conditioning and also reinforcement, but the absence of any acknowledgement of the cognitive or purposive intervention of the individual appears to be a serious defect of the theory. Allport summarised the deficiency in these words:

Whatever else personality may be, it has the properties of a system (wherein all parts are mutually related). Quasi-mechanical views of learning stress fragmentary acquisition. They do not allow adequately for coherence and self-relevance. Hence we must accept additional principles to account more fully for pattern and organization within the total personality system (p.109).

3.3.4 Self Theories

Forgas and Shulman (1979) in their review of personality theories traced their origin to the principal philosophical theories of the human being. They stated Locke's assumption that the human mind was a tabula rasa at birth and acquired content through the impact of sensation. They quoted

Allport's contention that the Lockean view of man as 'reactor' dominated British and American philosophy and formed the ground for the behavioural tradition. The theories described above can all be traced back to Lockean origins.

The alternative philosophy, due to Leibniz, proposed that the intellect was perpetually active in its own right and manipulated sensory information according to its own inherent nature. Whereas the Lockean mind was reactive when stimulated, the Leibnizian intellect was self-propelled. The self-theories, according to Forgas and Shulman, 'pay more attention to the person as an active, seeking, self-fulfilling organism' (p.54).

Jung's theory divided personality into four main aspects: the structure itself which he termed 'constituent parts', contents, dynamic forces, and their interrelationship. The final aim of development in Jung's theory was described as 'self-actualization'. Jung is also credited with a type theory which identified eight main types of individuals: thinking, feeling, sensing and intuitive types, each of which can be either extravert or introvert.

Another theorist listed by Forgas and Shulman in this group was Allport. The principal concept in Allport's view of personality was 'functional autonomy' by which earlier

purposes lead into later purposes, which then are fully adopted; in other words, adult motives are functionally autonomous from juvenile ones. As an example of the way in which this happened he pointed out that ability often turned into interest; in other words, we often like what we do well. Allport acknowledged the existence of quasi-mechanical functions in his view of personality, but stressed that the acquired system of motivation was self-related. (This theory was fully developed in Allport, 1963, Chapter 11.)

3.3.5 Motivational Theories

The utilitarian school of thought in the nineteenth century held that man was unable to desire anything unless the idea of it was pleasurable. This psychological hedonistic view has in the twentieth century been somewhat modified by the emphasis on the avoidance of pain. Tension reduction has claims to be regarded as the sovereign motive:

All our conduct, it is said, is a striving toward equilibrium, detumescence, homeostasis, or escape from tension (Allport, 1963, p.199).

There is some semantic confusion between the terms 'motive' and 'need'. Forgas and Shulman (1979) restricted 'need' to physiological needs which must be satisfied; motivational needs, which were in effect learned wants, were 'motives'.

The four primary motives quoted were attachment, security, competence and cognition (p.143). Nuttin (1974) on the other hand used the term 'need' more generally. Describing a functioning personality as 'a pattern of interactions with the environmental world' (p.3), Nuttin defined the concept of need as 'the dynamic aspect of these behavioural relationships themselves' (p.4). Nuttin's reasoning extended the field to include the motivational power of ideas, cognitive structures and goal objects to influence behaviour. Stressing the interaction of perception and motivation in explaining behaviour, Nuttin continued:

In fact, the world of objects we are dealing with is approached at the same time by our perceptual and motivational functions, and also by higher cognitive processes which allow us to construct cognitive maps of the situation and the world as a whole (p.22).

In studying entrepreneurial behaviour, McClelland (1961) related success in entrepreneurial endeavours to the individual's achievement motive. Originally defined as a need to achieve success, the concept was positively related in a series of studies by McClelland to better memory for incomplete tasks, greater preparedness to volunteer for experiments, greater involvement in the community and greater resistance to social pressure. Many other studies, however, including some by McClelland himself, yielded conflicting results.

One difficulty was the establishment of a completely

satisfactory means of measurement. Fineman (1975) described and assessed twenty-two previous measures and offered another of his own. In fact, the Fineman study coincided with a change of fortune for the construct, which had been heavily criticised during the early 1970s. Closely associated with this change were Atkinson and Raynor (1978) in the course of their reviews of studies of strength of motivation and efficiency of performance. Noting that the relationship depended upon the nature and requirements of the task, they contended that much of the inconsistency of earlier studies of need for achievement and performance could be explained by this. Another refinement to the original concept was the finding that need to avoid failure in certain situations was a stronger motive than need to achieve success. In passing it should be noted that this dependence on the nature of the task is consistent with Mintzberg's job variables (see Section 1.5.3).

One study which deserves mention is Ghiselli's (1971) study of the relationship between thirteen 'traits' (using the word in its broadest sense) and managerial talent. High correlations were reported in the case of supervisory ability and intelligence from the sub-group he called 'abilities'; significant correlations in the case of need for achievement and need for self-actualisation from the 'motivational traits' sub-group; and modest correlations in the case of self-

assurance and decisiveness from the 'personality traits' subgroup. This list is perhaps not as surprising as the list of 'traits' which were not related, including maturity and need for power; furthermore need for financial reward and need for security were negatively related. Although this study adds support for motivational traits as determinants of managerial potential, its greatest value is probably the support it gives to enlightened personnel policies.

3.3.6 Cognitive Theories

Following the Leibniz tradition, de Waele and Harré (1976) enunciated a cognitive theory based on the conception that a person's 'resources for social performance' are not genetically fixed, but grow and develop (p.190). They argued that explanations of behaviour should not depend entirely on identifying specific stimuli causing specific responses, because there may not be any such stimuli. Rather was it 'the cognitive and perceived and interpreted environmental conditions which shape the spontaneous flow of a person's actions into a meaningful structure' (p.192). Their approach was to seek in a person's nature for the source of any observed power or capacity for action. As an explanatory theory this has much in common with Doob's 'behavioural potentials' (1971). Stating that the 'situation x person' scheme of explanation was not sophisticated enough, they

pointed out that situations were not independent variables; they were 'constructed and endowed with meaning by people in terms of those very same cognitive resources upon which their social competence depends' (p.196).

Forgas and Shulman (1979) also emphasised the importance of the perceptual system, which organised the four motives (attachment, security, competence and cognition) into a hierarchy which was unique to each individual. Cognitive style was another way of conceptualising this hierarchical structure. They defined cognitive style as a perceptual pattern which included information on an individual's self-concept, world view, and ideals. They described six cognitive styles (see Chapter 6).

It is probably a sign of a healthy science when its theories and philosophy change with the passage of time. The study of personality as a separate field within general psychology is still of recent origin. Many theories have been advanced, some of which have not withstood the application testing to which they have of necessity been subjected, and have been replaced. Because the cognitive theories are among the more recently developed, writers who espouse their cause may imply that the last word has been spoken. Harré (1983) has sought to correct this implication:

Neither the traditional experimental psychology nor the more recent cognitive approach is adequate for the study of personal psychology. The former systematically confuses causal with moral orders, while the latter has no way of representing the structural unities of belief and feeling that constitute individual minds (p.3).

3.3.7 Social Learning Theory

The starting assumptions of this theory are that individuals possess a set of potentials for responding to different situations and that experience can modify future behaviour. Rotter and Hochreich (1975) have set out their view of personality as one of continual change, since the individual is constantly undergoing new experiences, but of relative stability, since previous experience is moderating the effect of new learning. In this theory there are four basic constructs: behaviour potential, expectancy, reinforcement value and the psychological situation. Expectancy is a highly individual perception and the theory is thus often classified as a cognitive theory. This and reinforcement value are the two major constructs of the theory. In social learning theory, according to Rotter (1966), a reinforcement acts to strengthen an expectancy that a particular behaviour will be followed by that reinforcement in the future.

Rotter explained that expectancies generalised from a specific situation to a series of similar situations and these generalised expectancies made up an important class of

variables in personality description (p.2). Rotter and Hochreich (1975) pointed out that generalised expectancies for internal versus external control of reinforcement and for interpersonal trust had been extensively studied and used as a basis for prediction. The feature of generalising enables the social learning theory to have application at both specific and general levels.

Rotter, Chance and Phares (1972) claimed social learning theory to be a process theory, and as such possibly unique, capable of explaining behaviour in complex social interactions. At the same time, as Rotter and Hochreich pointed out, it had content categories which were systematically related to the theory. The content consisted of a number of empirically determined needs, such as recognition, status, dominance, independence, protection dependency, love and affection, and physical comfort. Forgas and Shulman (1979) described the constructs used in social learning theory as a bridge between the behavioural and cognitive aspect of behaviour (p.49).

In summarising the basic concepts of the theory, Phares (1976) emphasised the significance of expectancies which 'are regarded by social learning theorists as prime determinants of behaviour; reinforcement alone does not explain behaviour adequately' (p.13). He described social learning theory as 'a

theory of how choices are made by individuals from the variety of potential behaviours available to them' (p.13), these choices normally being exercised in striving to attain or to avoid certain aspects of their environment; this is clearly goal-directed behaviour and the theory therefore can be said to have a purposive element.

3.3.8 Discussion

These theories may now be reviewed in the light of the aspirations of the present research. As stated in Section 1.2 the ultimate hope is that, through this research, 'our understanding of attitude to time and approaches to time management may be enhanced'. It follows that those theories which help the understanding of what people do as distinct from what they are like, to use Mischel's phrase (1973, p.265), are the most likely to prove fruitful. A further guideline which can be used to narrow the field of investigation arises from the proposal that any results of this research should be the province, not only of academics or educationists, but also of practising managers, who provided the stimulus for this research, who (in most cases) willingly acted as respondents, and who deserve to be beneficiaries. Managers can be described as goal-seeking, thoughtful individuals who are increasingly interested in the processes of development, including the development of themselves.

It has already been stated that psychoanalytic theories have little relevance to this research, and that trait theories are limited in predictive power, at least in respect of predicting behaviour at work. Of quasi-mechanical theories it has been said that the absence of cognitive or purposive intervention from the concepts is a defect for the purpose of this research. Of self theories the functional autonomy of Allport has the greatest appeal because of the relatively high status given to the influence of the situation, but again there is no purposive element in the conceptual framework.

The remaining theories reviewed above are the motivational, cognitive and social learning theories, all of which offer a conceptual base which is compatible with this research. All can be associated with behaviour and all can be interpreted in a way to satisfy and help practising managers. The final selection was based on the availability of suitable measures of assessment.

The most commonly used concept within the group of motivational theories is McClelland's need for achievement. Particularly since Atkinson and Raynor's work (1978), showing that lack of definition of the task was responsible for much of the reported conflict in the results, this concept was a strong contender for adoption as an indicator of personality.

Unfortunately most of the empirical work reported in the literature is based on the Thematic Apperception Test (TAT), a projective test which is judged inappropriate for the subjects contributing to this research. The criteria which have been applied in the selection of methods are discussed in Section 4.3.2.

Perhaps because support for cognitive theories is so recent, no one measure has emerged to command attention. Certainly the literature is not as great as that relating to motivational or social learning theories and this absence of a firm comparative base argued against pursuing cognitive theories in this research.

The literature supporting social learning theory on the other hand is vast, particularly since the publication of Rotter's seminal paper (1966) on locus of control. Although many variants of the original twenty-three-item internal-external scale have been used, the comparative base for further research using the original scale is very large. The locus of control concept was selected, therefore, as the measure of personality to be developed as the second strand of this research programme. The literature will be reviewed in detail in Section 3.3.

3.4 INTERNAL-EXTERNAL LOCUS OF CONTROL

3.4.1 Development of the Measure

Rotter (1966) maintained that reinforcement, reward or gratification was an important element in the acquisition and performance of skills and knowledge. In practice, rewards have different values, and hence effects, with different people. This difference depends on whether the person perceives a causal relationship between his own behaviour and the reward, and this relationship can vary in degree. Rotter proposed that this variable was of major significance in understanding the nature of the learning process and also that individuals differed consistently in the degree to which they were likely to attribute personal control to reward in the same situation.

In Rotter's terminology, if a person perceived that an event was contingent on his own behaviour or his own attributes, this was described as belief in internal control. If on the other hand an event, although following some action of his own, was perceived as not being contingent on his action, this was described as belief in external control. Influences on which the event was considered to depend might be termed luck, chance or fate or control by powerful others, or the complex action of forces surrounding him.

The theoretical background for this hypothesis was the social learning theory which Rotter had been developing for over a decade. According to the theory the action of a reinforcement strengthens an expectancy that a particular behaviour or event will be followed by that reinforcement in the future. Once an expectancy for such a behaviour-reinforcement sequence is built up, the failure of the reinforcement to occur will reduce or extinguish the expectancy. An important stage in the development of the hypothesis is the fact that expectancies tend to generalise from a specific situation to a series of situations which are perceived as similar. This generalised expectancy for a class of related events makes up one of the variables in personality description. Generalised expectancies will then result in characteristic differences in behaviour, depending on whether the situation is classed as chance-determined or skill-determined.

Rotter reported prior research which related to the work described in this paper. For example, in learning theory it had already been recognised that differences in subject behaviour were related to task differences as between skill and chance. Different conclusions were reached by different authors and Rotter made the point that skill-chance differences had not been systematically studied previously. He quoted Veblen (1899) who felt that a belief in luck or chance was generally characteristic of an inefficient society.

He reported that Merton (1946) described belief in luck as a defence behaviour, as an attempt 'to serve the psychological function of enabling people to preserve their self-esteem in the face of failure', suggesting that it tended to 'curtail sustained endeavour'. (Rotter, 1966, p.3)

Other concepts reviewed by Rotter include that of alienation which he saw to be related to the concept of internal-external control. He quoted Seeman (1959) who linked alienation, as it referred to powerlessness, to internal-external control as a psychological variable. He mentioned that White (1959) noted that many authors believed that it was characteristic of all species to explore and to attempt to master the environment, a concept which he called 'competence'. Rotter referred also to the work of McClelland and others developing their concept of need for achievement (referred to in Section 3.3.5) and suggested that there was probably a relationship between their concept and internal-external control. A further variable mentioned is the concept of 'field-determined' as against 'body-oriented'; presumably these correspond respectively to the more usual UK terms 'field dependent' and 'field independent'. He quoted Witkin, Lewis, Hertzman, Machover, Meisner and Wapner (1954) reporting experiments in which subjects described whether they derived most of their cues in perception from the field or from internal sources. Although such a relationship is potentially interesting, Rotter had not been able to support the relationship from his own research.

Attempts to measure individual differences in a generalised expectancy or belief in external control as a psychological variable were begun in 1957. After several measures were tested, Rotter and others started developing a new forced-choice questionnaire, with each item comparing an external belief with an internal belief. The initial scale of one hundred items was progressively reduced by factor analysis, internal consistency criteria and too high a correlation with a social desirability scale. The final scale consisted of twenty-three items, to which Rotter added a further six 'dummies' in an attempt to make the purpose of the scale more ambiguous to the respondent. Although this was a small scale, Rotter claimed that many of the items sampled a broadly generalised characteristic over a number of specific or different situations. The name given to the twenty-three-item scale, with the six filler items added, was 'The Rotter Internal-External Control Scale', but more commonly referred to simply as 'the I-E scale'. A copy of the scale, in the form used in this research, is shown as Appendix 3.2.

Since Rotter's monograph was published the interest it has stimulated has been very great indeed, much of it based on the I-E scale itself, but much of it using the concept of locus of control as a starting point for developing other measures. In the remainder of this chapter some indication will be given of

the breadth of subject area covered by what might be described as application research. Some of the controversy which has surrounded subsequent research will be outlined, with special attention paid to the view that the scale is more usefully thought of as multi-dimensional.

3.4.2 Applications of the I-E Scale

The publication of the I-E scale stimulated many researchers to investigate possible correlations with other attributes and MacDonald (1973) quoted a list of 339 references in a bibliography of works to the end of 1969, adding that the entire body of I-E literature increased by over thirty percent in 1970 - just four years after the publication of the Rotter monograph. According to Pettersen (1987), the number of publications listed in May, 1986 by the Dialog Computer Index System exceeded 5,000. The following examples will serve to illustrate the wide variety of attributes investigated in conjunction with locus of control:

Anxiety - Platt and Eisenman (1968);

Ego functioning - Kuypers (1972);

Role ambiguity - Organ and Greene (1974);
Keenan and McBain (1979);

Role conflict and stress - Fusilier, Ganster and Mayes (1987);

Leader behaviour and performance - Anderson and Schneier
(1978);

Future time perspective - Platt and Eisenman (1968);
Dickey (1975);

Need for achievement - Gozali, Cleary, Walster and Gozali
(1973); Pandey and Tenary (1979).

Rotter, in reporting on studies carried out up to the time of his monograph (1966), described them as 'an unusually consistent set of findings' (p.24). In a review of research carried out in the following five years Joe (1971) reported results generally consistent with the I-E construct. Studies had shown externals to be more anxious, aggressive, dogmatic and suspicious than internals; they described themselves as more concerned with fear of failure than with achievement per se. On the other hand internals were more willing than externals to remedy personality problems, and showed more initiative in their efforts to attain goals and to control their environment. In general internals tended to show greater interest and effort in achievement-related activities than did externals. He noted that some results suggested that the scale was sensitive to political affiliation and sex differences, and that there was considerable evidence that ethnic minorities and the lower social classes tended to be more external than the population mean. In this respect Kleinke (1978) observed that 'it is probably realistic for underprivileged Americans to believe in external control because they actually are denied power and influence in American society' (p.134). In respect of achievement, Rotter pointed out that 'most items involving achievement had to be

dropped from the scale because of their apparently great susceptibility to social desirability influence' (1966, p.21), and yet many studies have shown a consistent relationship with the items which remain.

The question of social desirability influence will be considered further in Section 3.4.3.

3.4.3 Criticisms of the I-E Scale

The earliest version of the locus of control scale contained a hundred forced-choice items, each one comparing an external belief with an internal belief. Reviewing this early work Lefcourt (1981) described it as 'a large pool of items devised to assess control expectancies with regard to a number of different goal areas: for example, achievement, social recognition, love and affection' (p.3). Lefcourt continued:

This early scale, consisting of a number of theoretically discriminable subscales, would have allowed for a profile of control expectancies for a number of different goals, as well as a general, overall locus of control score. Unfortunately, this early attempt at creating a complex scale succumbed to the rigors of factor analysis that reflected only one large factor and a number of smaller factors each of which comprised too few items to be of use' (p.3).

Lefcourt expressed concern that investigators were tending to assume that a measuring device was the sole definition of a

construct. Writing almost dismissively of investigators who wished to compare the presence of the locus of control trait among persons, he suggested that they would adopt commonly used scales whether or not they were appropriate for their own samples. He contrasted this approach with considering locus of control as a 'convenient abstraction describing individuals' causal beliefs' (p.1) which encouraged the development of new measures more relevant to the study of particular groups.

While Lefcourt's adventurous approach is reflected in the developments described in the collection of papers he has assembled, he has been criticised by Palenzuela (1984) for confusing the expectancy of locus of control and causal attributions. An example of this confusion is seen in Lefcourt, Martine and Ware (1984), in which occur phrases like 'persons differing with regard to their attribution styles (internal versus external locus of control)' and 'to translate such expressions . . . into assumed "internal attributions for achievement success" (in locus of control terms)' (p.57). Referring to an argument advanced by Zuroff that locus of control was conceptually and operationally different from an attribution, Palenzuela clearly distinguished between the two in these words:

Two basic differences between both constructs are : (a) locus of control is evaluated before an outcome has happened while attributions are evaluated afterwards, and (b) internal-external in Rotter's theory refers to whether the outcome is perceived as contingent or non-contingent with one's behavior, while in attribution theory, internal-external refers to whether the causes are physically inside or outside a person (p.684).

Pettersen (1987) also drew attention to the frequent confusion in the literature between the two concepts. Pettersen argued along the same lines as Palenzuela and referred to 'perceived behavioral outcome contingency' of Rotter's theory (p.205).

Palenzuela outlined the development of his 'contingent-noncontingent expectancy scale' of thirty-two items with a three-factor solution which supported the distinctions he made between contingent-noncontingent expectancy and other concepts. The two controversial questions about extending the Rotter scale and of multi-dimensionality, arising from this paper of Palenzuela, will be discussed further in Section 3.4.4.

There have been conflicting comments on whether the I-E scale is independent of measures of social desirability. Rotter reported having eliminated many items from his preliminary scale to improve its independence, leaving the remainder with only a low relationship with social desirability. However Joe (1971) reported several studies which did show significant

correlations. Rotter, Chance and Phares (1972) supported the scale in these words:

The variable to be measured may bear a strong relation to social approval as a motive, and attempts to exclude social approval or make its influence zero may, in fact, eliminate powerful referents needed to make an adequate test in the first place. Finally, if we do eliminate social approval from the items or from the test procedure, then it should be eliminated also from the situations about which we wish to predict (p.325).

The present writer has much sympathy with the final comment quoted above. In general, while it is healthy that any development should be critically examined, the obsessive search for impurities has the danger of producing an emasculated measure which no longer reflects the real world.

Peck and Whitlow (1975) in a brief review of I-E control gave a generally unfavourable report, making much of the relationship with social desirability and hence querying the scale's validity. They also stated that results tended to be very inconsistent, without quoting any examples of this. It is difficult to reconcile the statement that 'apparently he [Rotter] never regarded this as a personality dimension' (p.79) with the heading of a section in Rotter's monograph, 'Internal versus external control as a personality variable' (1966, p.9). Weak results have been obtained in respect of the I-E scale's predictability, as pointed out by Joe and also

by Peck and Whitlow. Rotter himself acknowledged that 'the test is limited in ability to discriminate individuals . . . [it] is more suitable for investigations of group differences than for individual prediction' (1966, p.17). It would appear that this is a major difficulty operating against its successful use in this research programme.

It may be that one is asking too much of a single measure of such a broad characteristic. Indeed Phares (1976) warned : 'The mindless reliance on I-E in every situation is a waste of time and seems to imply a simplistic view that behavior can be predicted with but one or two concepts' (p.23). Another warning is that tests measuring, for example, anxiety, introversion, ego strength 'are often more strongly related to each other than to criteria that might serve to differentiate them' (Mischel, 1968, p.88). One might wonder whether Rotter would have approved the view expressed by Kleinke (1978):

The self-perception of external versus internal control is a way of looking at the world and has nothing to do with intrinsic or genetic differences between people (p.130).

No doubt Kleinke's intention was to support the argument that the concept of locus of control was a generalised expectancy but to say that a person's 'way of looking at the world' had nothing to do with intrinsic differences is puzzling to say the least.

A telling comment from MacDonald (1973) is the following:

All of the research points to the same conclusion: people are handicapped by external locus of control orientations. The prevailing belief is that it is desirable to change people, especially those who are not doing well in our society, in the direction of internality (p.170).

Phares (1976) stated that 'we know little about how to induce changes in locus of control beliefs . . . we must learn more specifically how to do this' (p.176). Already in 1978 Kleinke was able to report that 'a number of different psychologists have developed programs for teaching children and adults to increase their self-perceptions of internal control' (p.135). This appears consistent with the main thrust of social learning theory and, if we apply these ideas of change to ourselves, with the concept of self-image.

A characteristic of the I-E scale is that it appears to be situation-specific. As Phares stated:

Like any other behavior variable, I-E does not possess complete generality. By this we mean that its effects on behavior are not uniform and invariant in all situations (p.45).

An example of the scale's dependence on situation was given by Cherlin and Bourque (1974) who administered the same scale to a mixed group of students and to a random sample of residents in the Sylmar area, most of whose homes had been badly damaged

by the 1971 San Fernando, California earthquake. Much of the difference between the results of the two samples was attributed by the authors to the effect on the subjects' attitudes as a result of the disaster.

Lefcourt (1981), emphasising that locus of control for unvalued goals should have little or no meaning for an individual's behaviour, continued:

As social learning theory assumes, expectancies should interact with values as well as with situational constraints in the determination of behaviour (p.8).

This reminder of the origins of the locus of control construct is timely. In the words of Doherty: 'One of the strengths of locus of control research at its best has been its grounding in Rotter's social learning theory' (p.181).

It is appropriate that this section covering criticisms of locus of control should end with the following comment from one of the critics:

. . . it is our intention to affirm that the construct is robust enough to withstand the many demands made upon it - provided that such demands are well conceptualized and that related investigations are consistent with those conceptualizations (Lefcourt, p.xiii).

3.5 DIMENSIONS OF THE I-E SCALE

3.5.1 Introduction

Rotter himself regarded the scale as uni-dimensional. He did conduct a factor analysis himself which 'indicated that much of the variance was included in a general factor. Several factors involved only a few items, and only a small degree of variance for each factor could be isolated' (1966, p.16). Unfortunately he quoted no actual figures but he did refer to a study by Franklin in which all the items loaded significantly on the general factor which accounted for 53% of the total scale variance (1).

If the scale is not in fact uni-dimensional, how many factors are required to give the best interpretation of scores? Parkes (1985) described the most commonly employed method based on eigenvalues greater than 1.0 as a 'psychometric rule of thumb'. She commented that she had seen only one study

Note 1 : Marsh and Richards (1987) cited a re-analysis of the original correlation matrix which showed that the variance explained by the first factor was in fact 9%.

where the investigator had used a goodness-of-fit statistic to determine how well the chosen solution fitted the data. She then described her own use of Revelle and Rocklin's 'Very Simple Structure' analysis, 'an exploratory method for determining the optimum number of interpretable factors to extract from a data set' (p.115). This showed a very clear indication of two factors as the optimum number.

A contrary argument was advanced by Marsh and Richards (1987) based on exploratory factor analyses of twenty different studies. In all studies there were at least five eigenvalues greater than 1.0; in no study did the first two factors explain more than 30% of the variance, nor did three factors explain more than 35% of the variance. According to Marsh and Richards, these findings showed that the Rotter scale was certainly not uni-dimensional and probably required more than two factors to explain responses. The authors stated:

The fact that both factors in a two-factor solution can be interpreted does not mean that there are no additional factors. Even when additional factors cannot be readily interpreted, it does not mean that a smaller number of factors can adequately explain the data. The issue of the number of factors is an important methodological issue that has not been given sufficient consideration in this research (p.43).

Not all would agree with the categorical way in which the authors relegate the subjective value of interpretation in

favour of the admittedly objective, but insensate conclusion of statistical analysis. Palenzuela's (1984) comment on this issue was:

The fact that the scale is multifactorial, however, does not necessarily mean that the construct to be measured is multidimensional. Multifactoriality may simply reflect contaminating factors of the scale rather than authentic dimensions of the construct (p.689).

Nevertheless the low proportions of variance explained by the first two or three factors in the review by Marsh and Richards amount to a warning to investigators.

Writing before the multidimensional debate had reached the sophistication of the contributions from Parkes and from Marsh and Richards, Phares (1976) referred to the relatively poor predictive power of the I-E scale in these words:

More precise prediction will ultimately be achieved through subscale approaches that indicate the strength of an individual's locus of control beliefs in several different areas. This will be superior to the reliance on a single score to characterize the individual's beliefs (p.175).

For comparison, a number of studies will now be summarised, with indications of the names given to the factors and of the items used for interpreting each factor.

3.5.2 Solutions with Two Factors

Mirels (1970) administered the I-E scale to 316 college students and described the two factors as:

- general control (nine items, of which four were in the first person), described as a belief concerning felt mastery over the course of one's own life;
- political control (five items), a belief concerning the extent to which the individual citizen is capable of exerting an impact on political institutions.

The items used for interpretation are shown in Table 3.1. compared with those from other studies. Palenzuela (1984) reported a Reid and Ware (1973) study which replicated the Mirels structure, the factors being named fatalism and social system control.

Cherlin and Bourque (1974) used two samples, one of 161 students and the other of 100 randomly selected residents of an area hit by a recent earthquake. The factors were:

- general control (thirteen items for the students and six for the residents);

- political control (seven items for the students and seven also for the residents).

O'Brien and Kabanoff (1981) used multistage cluster sampling to obtain responses from 0.5% of Adelaide households, questionnaires being completed by all persons fourteen years old and over, the sample totalling 1921. The authors analysed separately five sub-samples, described as workforce, housewives, students, retirees and unemployed. The factors identified in the whole sample and in the 1114-strong workforce sub-sample were:

- political control (five items in the whole sample);
- general control (six items, including two academic items in the whole sample but all three academic items in the workforce sub-sample).

Three factors were found for housewives, retirees and students, including a common thread of political control; the authors described a new factor common to housewives and retirees as 'luck in personal success'. The small (n=64) sub-sample of unemployed showed five factors which were all difficult to interpret.

Commenting that the I-E scale is generally interpreted as a generalised expectancy of personal powerlessness, Cherlin and Bourque made an important point:

Someone may obtain an external score because he or she believes that the individual has little control over political events and that students have little control over the grades awarded. These may be accurate perceptions of the environment and may not be associated with a sense of personal inadequacy in obtaining valued reward in other settings (p.197).

This echoes the observation of Kleinke (1978) reported in Section 3.4.2.

Parkes (1985) sampled 170 engineering students and 276 first-year nurses, totalling 406 valid questionnaires. Factors were described, rather than named, as follows:

- factor 1 (eleven items) reflecting control orientation at the personal level, ranging from hard work and ability to luck and chance;
- factor 2 (five items) concerning control at the socio-political level.

TABLE 3.1

ANALYSIS OF SOLUTIONS WITH TWO FACTORS

Items used for interpretation are marked x.

Rotter Item No. / Factor (1)	Mirels students n=316		Cherlin students n=161		Cherlin residents n=100		O'Brien random n=1921		Parkes students n=406	
	GC	PC	GC	PC	GC	PC	GC	PC	CPL	CSL
2			x						x	
3				x		x		x		x
4			x						x	
5	x						x		x	
6			x		x					
7				x						
9				x2		x			x	
10	x		x		x		x		x	
11	x		x		x		x		x	
12		x		x		x		x		x
13			x2			x	x			
15	x		x				x		x	
16	x		x						x	
17		x		x		x		x		x
18	x		x		x				x	
20			x							
21					x					
22		x		x		x		x		x
23	x		x						x	
25	x		x		x				x	
26										
28	x		x				x			
29		x		x		x		x		x
Variance %	M/F 10.9/ 12.1	M/F 8.6/ 6.7	19	10	9	16	7.3	13.3	20.1	
Loading criterion		0.30		0.40		0.40		0.30		0.23

TABLE 3.1 (contd.)

Notes: 1. Factor names are:

GC	general control
PC	political control
CPL	control at personal level
CSL	control at socio-political level

2. High loading also on other factor

3.5.3 Solutions with More Than Two Factors

Gurin, Gurin, Lao and Beattie (1969) administered a scale based on the twenty-three-item scale but with additional items to assist in differentiating between different meanings attached to the external concept. The thirty-nine-item scale was administered to 1695 Negro college students and four factors were identified:

- control ideology (thirteen items) referring to belief in the roles of internal and external forces in the culture at large;
- personal control (five items, all phrased in the first person) indicating belief in one's own control;
- system modifiability (four items) referring to control over racial discrimination, war and world affairs;
- race ideology (ten items, all written specifically for this study).

It should be noted that, although criteria for inclusion of items were given they were liberally interpreted, with some puzzling results, such as the exclusion of a relatively high loading item altogether and the inclusion of another which

loaded more highly on another factor.

Items used for interpretation are shown in Table 3.2.

Sanger and Alker (1972) attempted to replicate the Gurin et al. study on a female population and administered a scale which added to the Rotter I-E scale a further seventeen feminist ideology items. The subjects were ninety-six present or recent women students at a large university. Fifty members of the feminist organisations were the experimental group; the remainder acted as the control group. Three factors were identified as follows:

- feminist ideology (thirteen items which were added by the investigators);
- personal control;
- protestant ethic ideology.

No information was given about the number of items included in the second or third factors, nor was the factor matrix showing loadings on the factors published. The analysis concentrated on comparing average factor scores on the three factors obtained by the sub-sample of fifty Women's Liberation subjects with those of the control group selected from the directory of present and past students. Although no direct comparison can be made with other studies, the Sanger and Alker study is important for its use of added items with a highly selected population.

Marsh and Richards (1987) administered the I-E scale to 361 participants in a residential Outward Bound programme. Their analysis of the responses was much more sophisticated than the other studies reported here in that they used the first explanatory factor analysis simply to determine the appropriate number of factors to explain the data. The findings indicated that between four and nine factors would be required. Next the authors created a range of a priori models for different numbers of factors, and conducted confirmatory factor analyses for them in order to determine which model provided the best fit to the data. Their conclusion was that four or five factors provided the best solutions, naming the factors:

- general luck (six items);
- political control (five items);
- success via personal initiative (five items);
- interpersonal relations (four items);
- academic situation (three items).

Of these five factors four describe areas associated with belief in the expectancy of reinforcement, whereas the academic situation factor is in effect a subset describing a particular situation in which expectations can be held. For this reason Marsh and Richards' four-factor solution is shown in Table 3.2, with the academic situation items marked. No details were shown in the paper of variances or factor loadings.

TABLE 3.2

ANALYSIS OF SOLUTIONS WITH MORE THAN TWO FACTORS

Items used for interpretation are marked x.

Rotter Item No./ Factor (1)	Gurin et al. (2,3) Negro students n = 1695				Marsh Outward Bound n= 361			
	CI	PC	SM	RI	GL	PC	SPI	IR
2					x			
3			x			x		
4								x
5					x6			
6	x						x	
7	x							x
9		x					x	
10	x						x6	
11	x						x	
12	5					x		
13		x					x	
15		x			x			
16	x				x			
17			x			x		
18	x				x			
20	x							x
21	not used				x			
22	5					x		
23	x						x6	
25		x4			x			
26	x4							x
28		x					x	
29	not used					x		
Variance %	not quoted				not quoted			
Loading criterion	0.20				not quoted			

TABLE 3.2 (contd)

Notes:

1. Factor names are:

CI	Control ideology)	
PC	Personal Control)	
SM	System modifiability)	Gurin
RI	Race ideology)	
GL	General luck)	
PC	Political control)	
SPI	Success via personal initiative)	Marsh
IR	Interpersonal relations)	

2. Where Gurin items used alternatives from different items on Rotter scale, both Rotter items are marked.
3. All items in RI factor are added; added items also occur in CI and SM.
4. High loadings also on other factor.
5. Loaded over 0.30 but not included.
6. Items in academic situation in five-factor solution.

3.5.4 Studies Using a Different Format

Collins (1974) was not satisfied that the two options in the conventional Rotter forced choice format were exactly opposite in meaning. He therefore reconstructed the scale as forty-six items or statements, inviting response on a Likert-type agree-disagree format. The four factors which emerged from his analysis were described in terms of the perception of the world which was suggested by the items being interpreted. The factors were:

- the difficult-easy world (eleven items, all external alternatives in the original scale);
- the just-unjust world (eleven items, ten of which were internal alternatives), interesting for containing both the internal and external alternatives (one negatively loaded) of one item;
- the predictable-unpredictable world (seven items, all referring to luck or fate, positive loadings referring to the internal alternative, negative loadings to the one external alternative);
- the politically responsive-unresponsive world (eight items, including both internal and external alternatives

for three of the five Rotter items referring to politics or world affairs and the internal form of the other two).

Items used for interpretation are shown in Table 3.3. for comparison.

Duffy, Shiflett and Downey (1977) administered the Collins forty-six-item Likert-type scale to 275 Army reservists. The results of factor analysis are virtually identical with those obtained by Collins, leaving nine items which failed to meet Collins' criteria for inclusion. Four of these defined a fifth factor, which was named:

- the friendly-hostile world.

Unfortunately the complete factor matrix was not published but the authors listed the three highest loading items on each of the five factors. These are shown in Table 3.3.

TABLE 3.3

ANALYSIS OF SOLUTIONS WITH DIFFERENT FORMAT

Items used for interpretation are marked I for internal,
E for external alternative.

Rotter Item No./ Factor (1)	Collins students n=300				Duffy et al.2 Army Reservists n=275				
	E-D	J-U	P-U	PR-U	E-D	J-U	P-U	PR-U	F-H
2		I	E				E		
3				I,E					I,E
4	E	I			E				
5	E	I							
6	E	I							
7		I				I			E
9	E		I						
10	E	I							
11	E		I						
12				I,E				I	
13									
15			I						
16	E		I		E				
17				I,E				I	
18	E		I				I		
20									
21		I,E				I			
22				I,E				E	
23	E	I							
25	E		I		E		I		
26		I				I			
28	E	I							
29				I					
Variance %	29.3 (of 4-factor variance)	25.7	24.7	20.3	36.5 (of rotated variance)				
Loading criterion		0.35				0.35			

TABLE 3.3 (contd)

Notes:

1. Factor names are :

E-D	Easy-difficult world
J-U	Just-unjust world
P-U	predictable-unpredictable world
PR-U	politically responsive-unresponsive world
F-H	friendly-hostile world

2. The published results show only the three highest loading items on each factor.

Levenson (1974) devised a new scale to take account of the broad definition of externals implicit in the variety of the external alternatives in the I-E scale. She wished to differentiate between expectancies that fate or chance on the one hand, or powerful others on the other hand, would control events. Rotter (1966) had already acknowledged that either expectancy would be covered by the scale he devised. Levenson's new instrument consisted of eight items selected for each of the three scales: internal I, powerful others P, and chance C. The scale was administered in a Likert-type format in two studies to 96 adults in a metropolitan area and then to 329 students. The first study showed that the P and C scales correlated moderately with each other and both were negatively related to the I scale. The correlation reflects the fact that both P and C scales are based on a belief in a non-personal locus of control. The second study results, when factor analysed, confirmed general support for the three specified factors. Levenson's scale is so different from the others discussed that comparing her results with others would serve no purpose.

3.5.5 Discussion

Discussion on the utility of the Rotter I-E scale is centred on three issues raised by the studies which have been compared in this section.

(1) The population providing the sample being studied has been held to influence scores obtained by that sample. For example, Duffy et al. (1977) added a factor called 'the friendly-hostile world' to Collins's four-factor structure. The authors acknowledged that 'the emergence of this factor in the present analysis is perhaps attributable to the nature of the subject population' (p.216). As the subjects were all Army reservists, their acknowledgement could have been expressed more strongly.

One result of the Sanger and Alker (1972) study was that the personal control factor included political and world affairs items, which the authors explained by reference to earlier work with young radicals for whom 'their personalities seem to be fused with their politics' (p.123); they suggested that the same applied to feminists who devoted so much time and energy to their causes. Another result of this study was that feminists who rejected the protestant ethic were more likely to be personally internal than external. This was reported as being in line with their hypothesis that feminists would be more internal in their own lives yet more external in their control ideologies than the control sample; in other words, being 'more critical of the system as responsible for women's inferior status in our society' (p.119). A similar argument may well apply in the case of Negroes, sampled by Gurin et al.

(1969). The authors stated that Negroes 'believe that economic or discriminatory factors are more important than individual skill and personal qualities in explaining why they succeed or fail' (p.33).

Cherlin and Bourque (1974) used two different samples in their study, and there were considerable differences in the factor loadings attributable to the two samples. One distinction mentioned by the authors was the age difference between students and residents of a selected area, and this may have had an influence, for instance, in increased importance attached to political questions by the residents. A disappointing feature of the Cherlin and Bourque study is the superficial analysis of the difference between their two samples. They did, however, compare their heterogeneous samples with the black sample of Gurin et al., concluding:

Thus, it seems to us that the population characteristics of the sample being used have an important, but yet undetermined influence on the I-E scale results (p.573).

(2) Many of the studies based on the locus of control construct have used the twenty-three-item scale as a starting point, adding or deleting items in order to make the scale more relevant to the situation being studied. Lefcourt (1981) is one who has championed this cause (see Section 3.4.3) and several of the studies reviewed in this section have adopted

this approach. Gurin et al. acknowledged that the inclusion of three items from the Survey Research Centre personal efficiency scale might have influenced the emergence of the personal control factor (p.41), because their presence might have heightened the sensitivity of the subjects to personal efficiency items in the remainder of the scale.

Cherlin and Bourque expressed the view that the academic items were not relevant to subjects who had some years before ceased to be involved in educational matters and should be omitted. In fact, when they administered a scale from which these three items were excluded they found that the exclusion had not altered the results. O'Brien and Kabanoff (1981) noted in their analysis of the workforce sub-sample that one factor 'loads most highly on three items that refer to students or academic achievement' (p.193). It seems that adding or deleting items can affect responses to retained items in an unpredictable way, and is therefore unsafe.

One of the objections to using extended or attenuated scales is that it makes comparison with other studies using the whole scale difficult. An extension of this principle is the administration of the forty-six alternatives separately in an agree-disagree format. The Collins (1974) and Duffy et al. (1977) studies are two examples of this approach, while Levenson (1974) not only used single statements, but also

selected only a few from the Rotter scale and added items of her own. MacDonald has pointed to a significant difference between the two kinds of format:

Consequently, the presently available non-forced-choice scales are basically measures of the extent to which individuals agree that their reinforcements are contingent upon external factors. The forced-choice scales, on the other hand, measure the extent to which subjects favor external over internal explanations (p.183).

Investigators presumably must balance what they see to be the deficiencies of the conventional I-E scale against the possible isolation of their study from an incompatible literature. In the present research the original twenty-three-item scale is used in the forced-choice format.

(3) The content of the factors identified by the investigators referred to in this thesis may be conveniently compared by use of Tables 3.1, 3.2 and 3.3. Although there is some agreement between the various studies, few clear and unambiguous factors emerge. The one clear factor is the political control factor, with a close agreement between the seven studies naming it (including Parkes' 'control at socio-political level' and Collins's 'politically responsive-unresponsive world').

'Personal control' as a subscale finds little support: three of the five items in Gurin et al. are also found in Parkes.

'Interpersonal relations' from Marsh and Richards finds two items in common with Cherlin and Bourque's 'general control' but less in common with any of the other studies.

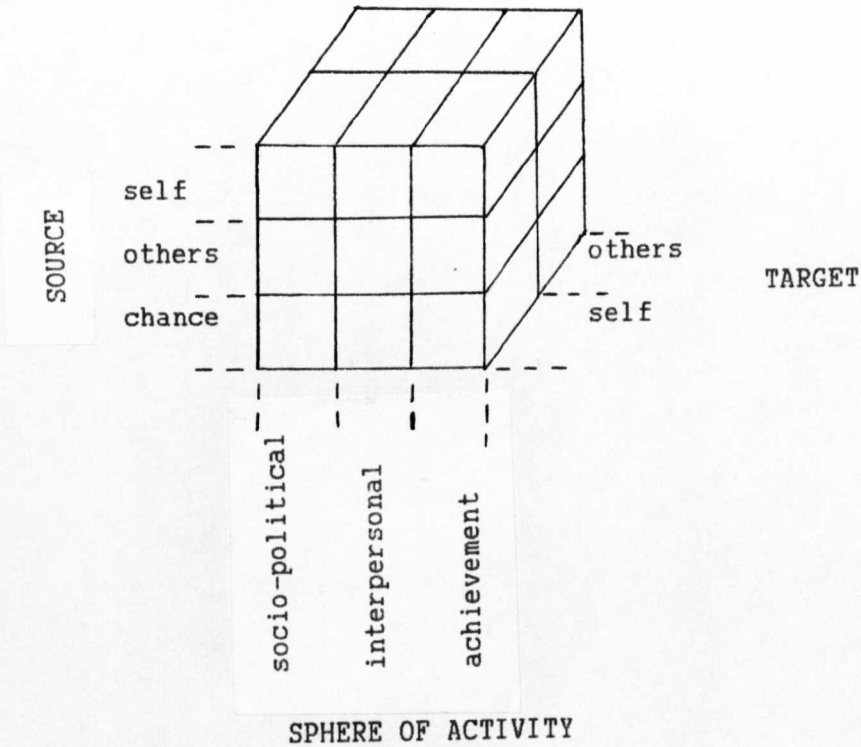
'General control' is a common name for a factor which in most studies contains about ten items. Many of the items in common have been dispersed between Marsh and Richards's 'general luck' and 'success via personal initiative'. Taking these two together as a general control factor, and including Parkes' 'control at personal level', there are seven studies which can be compared. Five or more studies are in agreement on eight items, which makes this general control factor the only other subscale which would meet with any kind of agreement.

If the approach favoured by Marsh and Richards, to create an a priori model as the first stage in establishing structure, is to be adopted, then all possible domains of behaviour need to be considered. To provide a conceptional framework as a way of ensuring this, Paulhus and Christie (1981) have developed a three-facet model of possibilities which invites consideration. The model, which could be used to generate new items for a scale designed for a specific purpose, is shown in Figure 3.1.

FIGURE 3.1

PAULHUS AND CHRISTIE'S TAXONOMY OF FACTORS

(Source : Paulhus and Christie, 1981, figure 5.6, p.182)



This model takes account of two of the analyses discussed in this section. The three categories of 'source' - self, others and chance - reflect Levenson's internal, powerful others and chance perfectly. The three categories of 'sphere of activity' - socio-political, interpersonal and achievement - reflect three of the preferred factors of Marsh and Richards: political control, interpersonal relations and success via personal initiative. In a search for a conceptual framework one can vary not only the names of the facets but also the number of cells in each facet. The model is thus both simple and versatile.

The dilemma faced by investigators in the field of locus of control is that Rotter's claim of unidimensionality has been largely disproved, but there is no agreement about which dimensions are implied in the construct. Marsh and Richards (1987) have noted that Rotter constructed items that reflected many different facets with a relatively small number of items. They continued:

While it may be justifiable to use such an approach to infer a general component, such an approach will not produce a unidimensional scale. Well-defined unidimensional scales are typically based on a set of relatively homogeneous items that result in responses that are substantially correlated - exactly opposite to the approach used by Rotter (p.60).

This seems to be a strong argument in favour of regarding the Rotter construct as multidimensional.

Regretting the conclusion reached in their own study, and in studies by others, that the I-E scale does not have a 'clean' factorial structure, O'Brien and Kabanoff commented:

Certainly the scale lacks the unidimensionality one would associate with the ideal personality measure. Perhaps this reflects the fact that we are trying to measure a generalised expectancy of locus of control when there is no such generalised personality/attitude dimension (p.196).

From the viewpoint of this research what matters is that the scale should measure something about which useful ideas can be discussed - useful in the sense of explaining and if possible predicting behaviour. Whether the scale meets the highest standards of psychometric purity is of less concern than that it should be usable as an operational definition of a concept. Empirical studies to be described in Chapter 6 have been designed with that objective in view.

CHAPTER FOUR

RESEARCH METHODS

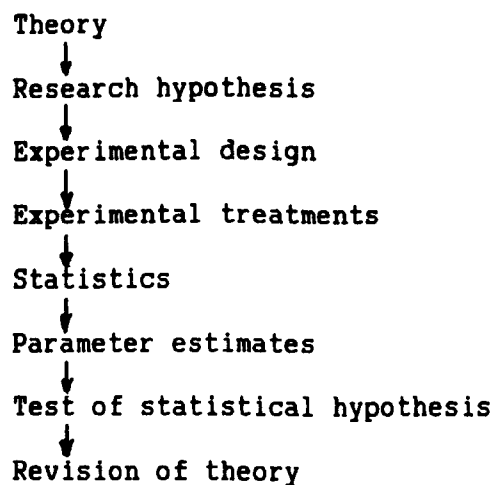
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4.1 RESEARCH STRATEGIES

4.1.1 Introduction

In this chapter the methods used to obtain information during the research are reviewed. Particularly because the approach used has been one of exploration rather than of drawing conclusions, it is helpful to describe the methodological debate as a background against which the review can be set.

With the development of the social sciences, research strategies leaned heavily on scientific method which had been derived in the exact sciences. In essence this specified that theories were the result of the enunciation, testing and validation of hypotheses. The stages of this process, as set down, for example, by Keppel (1973) were:



(p.11)

According to Bogdan and Taylor (1975) two major theoretical perspectives dominated the social sciences. One, positivism, sought facts as causes for social phenomena, assuming that subjective explanations involving individuals had little bearing. The other, a phenomenological approach, sought understanding from the viewpoint of the individual. Clearly the positivist adopted the quantitative approach set down in traditional scientific method, whereas the phenomenologist sought alternatives to the strict statistical procedures of hypothesis testing.

The distinction between the two perspectives is made sharper by describing them respectively as the prediction and the verstehen, or understanding, paradigms. To the positivist, the utility of a theory is its power to predict behaviour, whereas this is criticised by supporters of the alternative tradition for trying to explain human behaviour in simple mechanistic terms. In the verstehen tradition the argument, as described by Nachmias and Nachmias (1976), is that the major goal of the social sciences is to promote understanding, which requires explanation before prediction.

4.1.2 The Positivist Approach

The procedures of hypothesis testing are widely agreed. The description by Nachmias and Nachmias serves well:

Hypotheses are tentative answers to research problems and are expressed in the form of a relationship between independent and dependent variables (p.23).

The authors made the point that hypotheses could be derived deductively from theories, which is the case taken in the model shown in Section 4.1.1; but they might also be derived intuitively, or directly from observation. Perhaps the most common source of hypothesis construction is what the authors described as 'the state of knowledge in any particular science' (p.23).

Nachmias and Nachmias set down as requirements of hypotheses that they should be clear and specific, that they should be free from any values which the researcher might bring to the study, and that there should be methods available for testing them. The empirical testing process followed by most researchers in the positivist tradition was either an experimental design, with one or more independent variables being carefully manipulated, or a field study where factors other than those being studied were controlled as far as possible.

This limitation on the number of factors studied in any one experiment could produce, as pointed out by Rothwell (1980), an apparently excellent relationship which however explained only a small percentage of the variance. Weaknesses of the

experimental design, as identified by Kerlinger (1979) included the fact that effects were often artificial and difficult to generalise, and that the independent variables of experiments had little strength compared with the 'natural' strength of independent variables outside the laboratory. Another significant fact mentioned by Kerlinger was that variables characteristic of people, such as status variables, were not manipulable.

In personality studies, de Waele and Harré (1976) pointed out that the traditional experimental study which was designed to elicit correlations between treatments and responses, made sense only on some form of trait theory. As was shown in Section 3.2.2, much of the scholarly endeavour in relation to human behaviour has found trait theories unsatisfactory. Thus the utility of the experimental design in personality research is questionable.

Nachmias and Nachmias referred to a distinction originally made by Rosenberg between two kinds of relationships. The first is the stimulus-response relationship, with an external, specific, well-defined independent variable, with a dependent variable being a particular response to it. More commonly found in social science research is the relationship between a property, such as a background characteristic, and dispositions such as attitudes, values or orientations. In

these relationships the experimental design is not suitable, partly because the independent variable is less specific and the time scale of effects is longer than in stimulus-response relationships, and partly because it is usually not possible to establish two comparison groups of subjects, one of which can act as the control.

4.1.3 The Phenomenological Approach

Phenomenology as a term in philosophy was introduced by Hegel to refer to the evolution of consciousness as the recipient of phenomena or appearances. Brentano and later Husserl developed phenomenological philosophy in which the philosopher analysed and described objects or thoughts precisely as they appeared in experience, without any reference to prior knowledge. (For further discussion see, for example, Harré and Lamb, 1986, p.260).

'Research is a craft'. Bogdan and Taylor (1975, p.101) made this statement in arguing that successful research was a creative process rather than a simple and slavish adherence to a set of procedures. In elaborating on the need to remain creative they warned against a closed mind: 'To enter a setting with a set of specific hypotheses is to impose preconceptions and perhaps misconceptions on the setting'

(p.27). In a more specific vein they set out their conception of phenomenology in these terms:

The phenomenologist views human behaviour . . . as a product of how people interpret their world. The task of the phenomenologist . . . is to capture this process of interpretation. To do this requires what Weber (in Economy and Society, 1968) called verstehen, empathic understanding or an ability to reproduce in one's own mind the feelings, motives and thoughts behind the actions of others. In order to grasp the meanings of a person's behaviour, the phenomenologist attempts to see things from that person's point of view (p.13).

It can be seen that this view of research, with its emphasis on human perception, is diametrically opposed to pure positivism.

The distinctive characteristic which Bogdan and Taylor associated with qualitative methods is that they all produce descriptive data, which may be a person's own words, in spoken or written form, or observed behaviour. They also emphasised that qualitative methods concern the whole person, in contrast to the traditional parsimony of quantitative methods which encourages the study of few factors at a time. Another contrast to the rigours of quantitative method was suggested by Deutscher in the foreword to Bogdan and Taylor's book; this was that the emphasis in qualitative research was on discovery which followed the application of 'imagination, sensitivity and creativity' (p.vi). A similar aspect was

brought out in the description of some research on sociability; in describing the research Denzin (1970) pointed out that little theory emerged because

. . . our emphasis was on exploration rather than the collection of systematic information for the testing of specific hypotheses. We sought to find new ways of thinking about sociability, new ways of interpreting it . . . (p.318).

This aspect finds an echo in the classification of possible research methods suggested by Davitz and Davitz (1977). In their view the selection of the appropriate research stance depends on the current state of knowledge in the field of study; the possible options they suggested were:

- a test of a specific hypothesis;
- exploratory, generating a hypothesis; or
- descriptive.

The generation of hypotheses is the focus of grounded theory, so called because of its insistence that theory should be discovered systematically from the data. Grounded theory is the favoured research method of Glaser and Strauss (1967) who insisted that they were not proposing a revolution in research methodology:

There is no fundamental clash between the purposes and capacities of qualitative and quantitative methods or data. What clash there is concerns the primacy of emphasis on verification or generation or theory (p.17).

Glaser and Strauss set down the following requirements for the application of grounded theory:

- the theory should closely fit the substantive area;
- it should be understandable by laymen in this area;
- it should be sufficiently general to apply to a variety of situations within the area;
- it should allow the user partial control over the structure and process.

The approach is indicated particularly where constructs are not clear. A general idea of the construct is sufficient stimulus for gathering relevant data and from these data appropriate hypotheses can be developed.

Supporters of grounded theory are at pains to point out that the approach is not an easy way out of the demands of rigorous research. As Glaser and Strauss stated, the need for thorough verification of hypotheses is not diminished by the fact that these hypotheses owe their origin to the study of empirical

data rather than deduction from existing theory. However, Bogdan and Taylor sounded a sensible warning: 'Qualitative researchers must be aware of the distortions produced by their methods' (p.13). In a plea for a balanced view in research planning, Denzin expressed the view that 'Glaser and Strauss (1967), in their reactions against verification and middle-range theories, have excessively focused on grounded theory' (1970, p.60). A defence of Glaser and Strauss' stance would be that in championing an unfashionable cause an assertive approach is more effective than a balanced view.

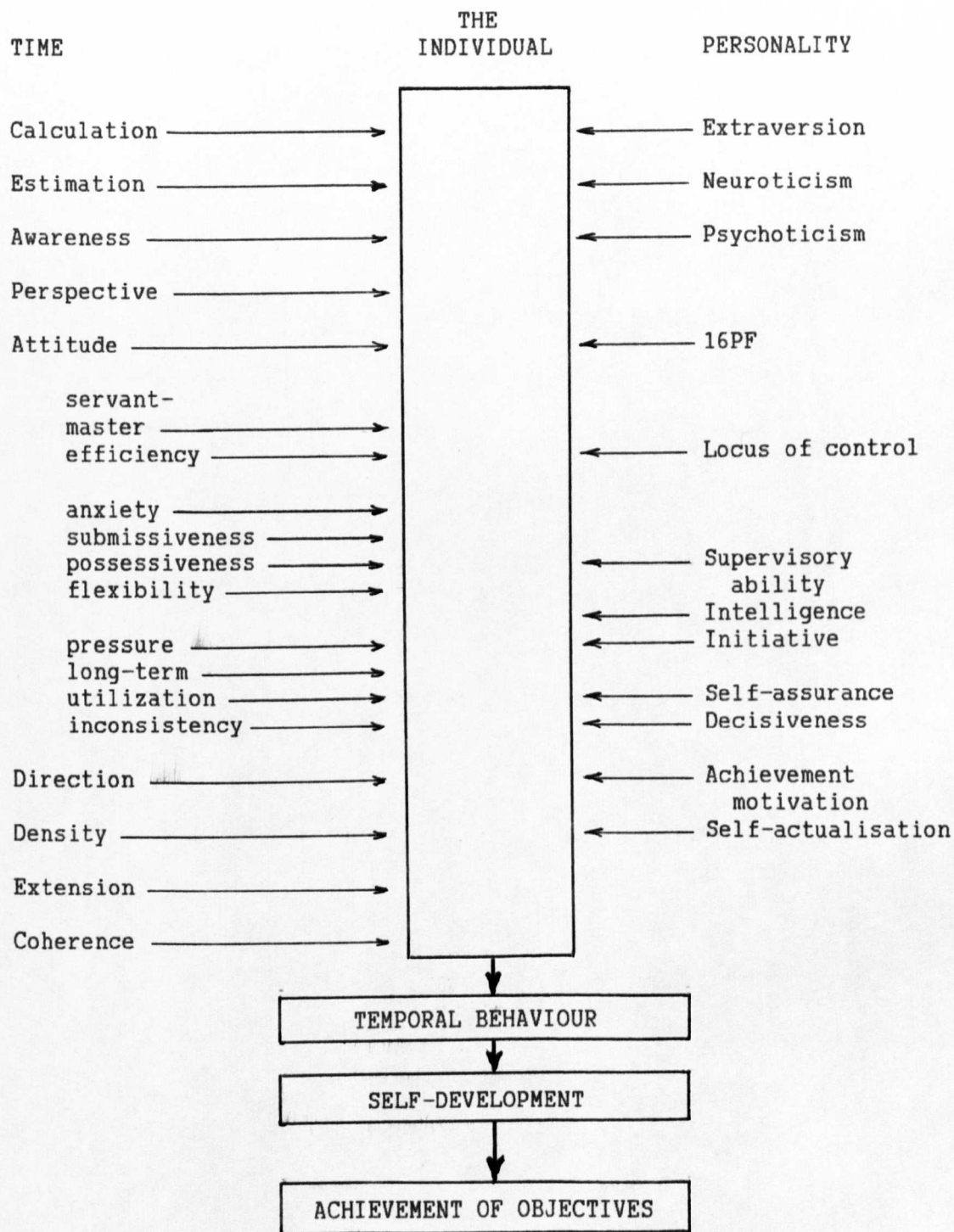
4.1.4 Modelling as an Aid

Meadows (1985) expressed the opinion that modelling explicitly was a wise step because otherwise researchers would do so implicitly. Its main function is to help the output to be coherent and defensible. In this sense, the modelling of different aspects of the present research will serve a useful purpose.

In Figure 4.1 is shown a model of the ultimate project as envisaged in Section 1.1. In broad terms this shows different aspects of time as they influence the individual, different aspects of personality, be they traits or motivational aspects, with the individual's temporal behaviour leading through self-development to achievement of objectives.

FIGURE 4.1

MODEL OF THE ULTIMATE PROJECT



None of the horizontal arrows in the model links with any other item, but each terminates in the box entitled 'the individual'. This is intended to indicate that each of the different aspects of both time and personality can have an influence upon, and can be influenced by, each other. The complexity of the possible causes of specific temporal behaviours is made more apparent by the use of the model.

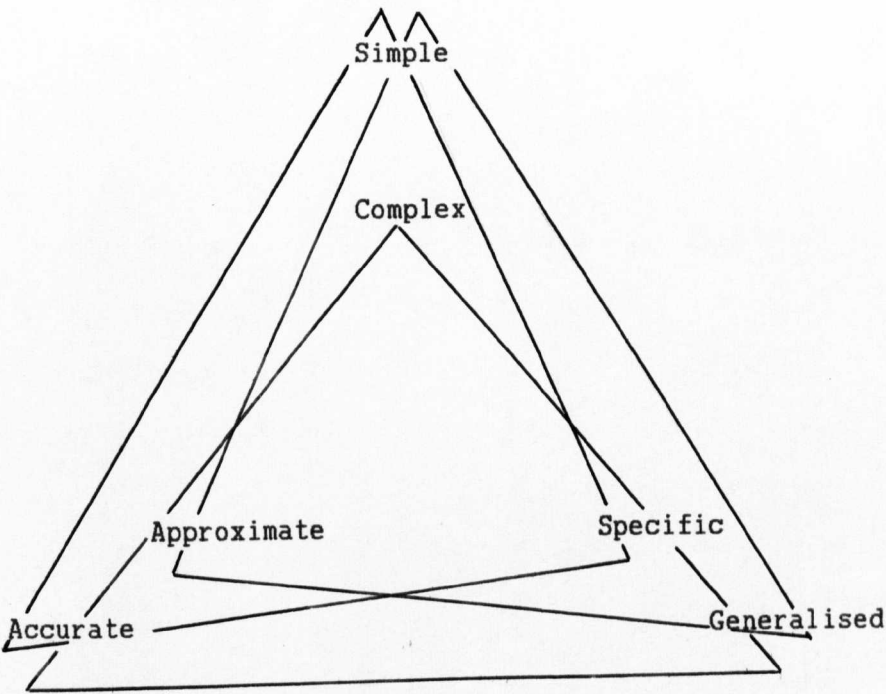
Stuart (1983) described a dilemma in the design of training programmes which was equally applicable to research programmes. The dilemma, first enunciated by Thorngate concerned three preferred characteristics:

- generalisability in preference to specificity;
- simplicity in preference to complexity; and
- accuracy in preference to approximation.

Stuart stated that in the real world one could achieve only two of these at the same time. A model such as that shown in Figure 4.2 illustrates the difficulty in that, once a decision is made about two of the variables, the third preferred state is unattainable. The model is not Stuart's and the argument which he quoted has had to be altered to describe the research, rather than the training, application.

FIGURE 4.2

MODEL OF STUART'S DILEMMA



- A simple and accurate research design could involve the testing of a single clear hypothesis under controlled conditions. In order to retain simplicity, it would be necessary to restrict the sample of subjects, thus reducing its generalisability.
- An equivalent accurate programme could be made more generalised if a comprehensive test battery were used with a truly representative sample of subjects. Simplicity would be lost here in the comprehensiveness of the testing procedure.
- If a simple test procedure were required to be as widely generalisable as possible, the simplicity of, for instance, testing for one attribute would produce only an approximation of the true effect of a more accurate research design.

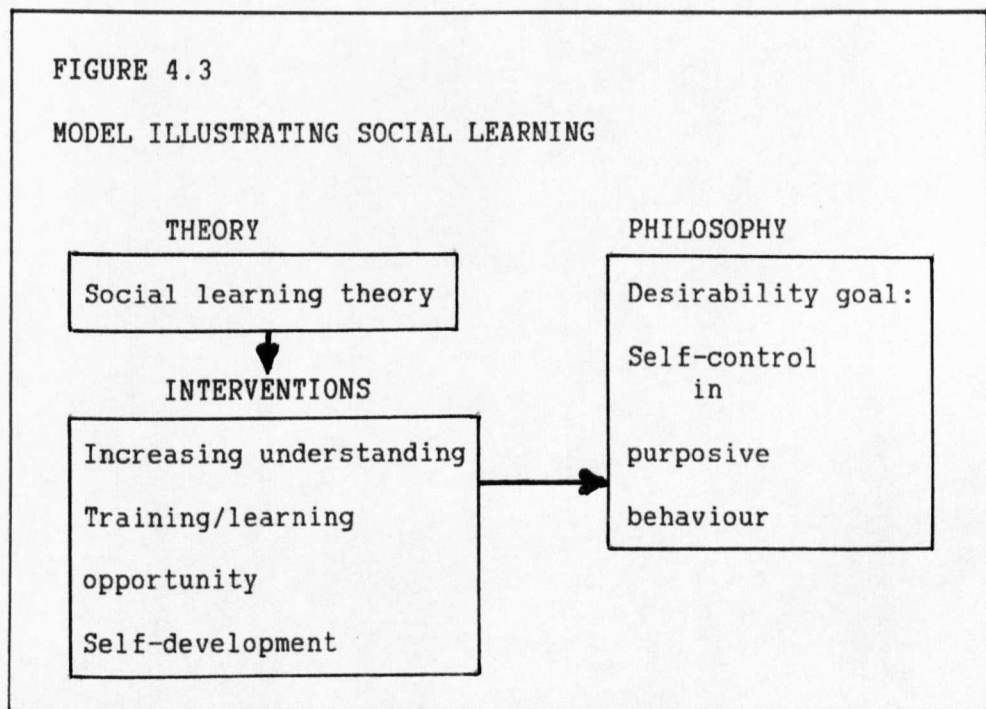
This is another example of the clarity afforded by modelling.

According to van Strien (1978) there should always be three elements in a viable research paradigm:

- a piece of scientific theory, guiding the approach to the problem;

- some 'philosophy', in the sense of norms or goals, specifying an ideal state of affairs; and
- a coherent set of 'interventions' intended to solve problems and to change reality in the direction of the norms and goals.

A model can be set up to illustrate that part of the present research which attempts to relate a personality characteristic to behaviour; such a model is shown in Figure 4.3.



Using such a model focuses the mind on specific questions, such as:

- What is the precise goal to be achieved?
- Which interventions are feasible?
- Which interventions are likely to prove the most fruitful?

The use of the model in Figure 4.3 serves also to make apparent the lack of a theory governing the question of attitudes to time. If a link can be established between awareness of time as a resource, establishing a positive attitude to its use and building up a time-effective style of management, then social learning theory can once again provide the guidance required to develop appropriate interventions.

The warning from Meadows (1985), that there may be implicit assumptions which are not revealed in the model but which may affect the results, is noteworthy.

4.1.5 Discussion

The distinctions between the two perspectives discussed above seem clear cut, but placing the present research wholly in either strategic camp would not be accurate.

In embarking on this programme the present researcher had neither the inclination nor the opportunity to contemplate an

experimental design. As the ultimate purpose of the research is to provide insights into temporal behaviour at work, the provision of data obtained under controlled conditions would be unrealistic. While the study of a group of managers at work would have been possible, the theory which would suggest appropriate variables does not yet exist.

The concept 'attitude to time' has no clearly agreed definition in the current state of knowledge, which makes the most appropriate research stance one of exploration. Yet one of the distinctive characteristics of qualitative research is that it is descriptive, using either the subjects' own words or observation of their behaviour. In this research although interviews have been conducted both early and late in the programme, neither of these methods has been used extensively. In their place the study has depended largely on subjects' responses in a forced pattern either by time diary records or by questionnaire. Although the time diaries are personal documents which would be acceptable as qualitative research tools, questionnaires are predominantly quantitative.

In response to this apparent dilemma, the consciously developed approach to the research programme has been one of searching, or exploration. In the event, the search for appropriate research instruments has become a significant part of the research since it was found that the instruments

themselves possessed an inherent structure which was worthy of exploration. The principal concern has been to try to 'operationalise' the term 'attitude' and the tentative conclusion is that a single questionnaire can provide a measure which is multidimensional and yet simple. In a process of partial verification, interviews have been conducted and the relationship of this single measure with an accepted measure from the personality literature has been examined. The 'empathic understanding' which has been derived from the interviews in particular has helped in the formulation of hypotheses which invite further testing.

The assumption which has preceded much of the empirical work described in this thesis, is that a very significant part of the variation in temporal behaviour which can be observed is due to individual differences between managers. This assumption has received support from Bogdan and Taylor (1975) in the following terms:

While people may act within the framework of an organization, it is the interpretation and not the organization which determines action. Social roles, norms, values, and goals may set conditions and consequences for action, but do not determine what a person will do (p.15).

4.2 SOME RESEARCH ISSUES

4.2.1 Validity and Reliability

As Nachmias and Nachmias (1976) pointed out, the problem of validity arises because measurement in the social sciences is usually indirect; this means that researchers are never completely certain that they are measuring what they intend to measure. In this discussion it will be useful to distinguish between different kinds of validity. Three kinds are commonly identified: content, criterion and construct.

'Content validity, or face validity, refers to the first impressions which the user has of the instrument', according to Pfeiffer and Heslin (1973,p.27). Harré and Lamb (1986), however, insisted that content validity must not be confused with face validity. They stated that a test had content validity when it contained relevant items; it had face validity 'when it appears to cover the domain' (p.361).

Criterion (or experimental) validity, according to Harré and Lamb, exists when a test relates appropriately to an external standard. Criterion validity may be concurrent when it refers to the present state of affairs, or predictive. Pfeiffer and Heslin simply referred to predictive validity, as did Kerlinger (1979), who further claimed that if a test predicted

successfully it mattered not what it measured. Nachmias and Nachmias used the term 'empirical validity' to include both concurrent and predictive validity.

Construct validity, which was described by Kerlinger as probably the most important aspect of non-experimental research measurement, deals with the psychological or other property the instrument measures. Pfeiffer and Heslin made the point that the instrument measured a concept which took on its full meaning through theory. In the words of Nachmias and Nachmias,

Construct validity involves relating a measuring instrument to an overall theoretical framework in order to determine whether the instrument is tied to the concepts and theoretical assumptions that are employed (p.62).

Pfeiffer and Heslin distinguished also convergent and discriminant validity referring respectively to a positive relationship with other measures of the same thing, and to being unrelated to scales measuring things it was not supposed to measure.

The term 'external validity' was used by Lusk and Wright (1982) to refer to the transferability of research findings to the real world by interpretation. They claimed that descriptive research was needed to realise this notion of external validity. Further, they argued that descriptive

research which comprised a comprehensive description incorporating the situation, the methods used, the dialogue which transpired and the resolution of the situation, merited being valued by the scientific community.

Another situation in which conventional approaches to validity are difficult to conceive is the research which is barely distinguishable from consultancy. McGivern and Fineman (1983) discussed the views of proponents of action research models in which the researcher was a participant. They reported claims that the usefulness of research was a measure of its validity. In the 'new paradigm' approach the researchers are not merely participants but the researchers and the researched occupy equal and interchangeable roles (see, for example, Resson and Rowan, 1981). Objective tests of validity in these approaches become virtually impossible.

Reliability, according to Nachmias and Nachmias, would not be an important issue if the measuring instruments in the social sciences were fully valid. It was described by Harré and Lamb as 'the extent to which a measure is free from random error' (p.360). If an instrument is used to measure a particular characteristic, all its parts should measure different aspects of the same characteristic. Repeated measurements by the same instrument should also produce the same score over a period of time. Pfeiffer and Heslin described these two aspects of

reliability as homogeneity and stability respectively.

Validity and reliability have been discussed here in terms of specific tests and instruments but the principles apply equally to phenomenological research. Describing a case study involving interviews with senior officers and councillors in a local authority, Stanyer (1981) referred to the intense partisanship and cultural influence which reduced the dependability of the information given. In this situation he referred to the importance of other evidence obtained, for instance from documents. Although each source of information had its own limitations, he went on to claim that 'taken together they provide a foundation of hard behavioural evidence against which the verbal responses of leading participants can be assessed' (p.487).

4.2.2 Questions of Control

One of the strengths of experimental design is that control of variables not being measured is to a great extent ensured. Conversely, quasi-experimental methods are weak on control which is lost in the quest for increased heterogeneity of the sample and representation of all relevant sectors of the population. This is an example of the dilemma described in Section 4.1.4, in which the three desiderata of research design cannot all be achieved together.

Rothwell (1980) described the difficulty of controlling non-manipulable variables as one of the major problems associated with field experimentation. Among the factors he listed were the need for confidentiality, for control groups and for measurements that avoid the Hawthorne effect.

Two illustrations will serve to emphasise the difficulty of control. Bogdan and Taylor (1975), in the words quoted in Section 4.1.5, emphasised the influence of individuals, without suggesting how this influence could be assessed.

In a study of the politics of role Rosenberg (1984) referred to the richness of descriptive data which can be obtained from approaches at the individual level. Power, which was a concept associated with role, was described in terms of social relationships as well as an attribute of the roleholder, without any reference to the possibility of controlling - or even assessing the influence of - these variables. Indeed, Rosenberg argued:

The absence of an adequate sociology of financial management and executive roles in local government literature allows a prescriptive formalism to exist in financial management textbooks (p.48).

4.2.3 Building Relationships

If the research process can be thought of as occupying a continuum with pure experimental design at one pole, and with new paradigm research at the other, the question of researcher/subject relationships will have to be differently considered in different zones of the continuum.

In laboratory experimentation the subject is expected to perform certain tasks under controlled conditions. In tests of this sort the subject needs to cooperate, but this is normally at a fairly superficial level. In some cases subjects might be able to vitiate the results by overt or covert rebellion but such an eventuality would be rare. Most of the published studies in this area involve students as subjects and one can normally assume that their interest in the area and in the results of the tests would secure willing support.

In the zone of the continuum occupied by the present research, subjects are practising managers or professionals and their interest in the subject matter cannot be taken for granted. In the case of managers attending a part-time or short full-time course one option is to ask for volunteers to undergo tests, but conducting a test solely with volunteers might

produce biased results. Understandingly intending subjects will be interested in any benefits which might accrue to them as well as knowing what the test involves. If the survey is being conducted within an organisation, prospective subjects might weigh not only the cost to them in terms of time and inconvenience, but also in terms of possible threat if adverse results were communicated. This last point was made by Knibbs (1980), who asserted that many managers see no value in research at all, occasionally even feeling 'that research, as a form of feedback, may be seen as threatening to the organisation or to management' (p.x).

This last attitude is not the province of managers alone. In a survey into the allocation of time to tasks by rural physicians, who might well have been expected to be interested in any results which could improve their situation, Feldman (1977) reported:

A major problem in the selection of subjects for this study has been the large number of refusals by potential subjects (p.109).

In the zone in which the researcher has to gain access to an organisation the potential for failure is increased because the management of the organisation is now an actor in the situation. Bogdan and Taylor (1975) referred to 'people who have the power to grant access' as 'gatekeepers' (p.33).

Where a simple relationship between researcher and subject can rely on a casual 'benefit for contribution' arrangement, the interests of the organisation will normally require a more formal arrangement, which Bogdan and Taylor described as 'the bargain', between the researcher, the subjects and the organisation, 'that defines the obligations they have to one another' (p.35).

The concept of the bargain is based on the presumption that all parties to it stand to gain a benefit of some kind. There are cases where in the pursuit of knowledge a researcher wishes to gain access to an organisation which is unlikely to benefit directly. Such a case has been described by Alexander (1984) who was researching the processes involved in the appointment of local authority chief executives. Out of forty-eight applications to study the processes adopted by authorities in the shortlisting and interviewing of candidates, he received permission to study only four. He concluded that members of the authorities which withheld permission saw confidentiality as a prime requirement of the process, which could not accommodate the researcher's 'guarantee of objectiveness, non-disclosure, non-identification and non-attribution' (p.2).

One writer who insisted that the pursuit of knowledge outweighed any question of benefit to participants was Denzin

(1970). In connection with studies involving the observation of subjects, he argued that it was not necessary to obtain prior permission of the subjects to be observed. He expressed his view in these words:

. . . I disagree with those who suggest that the sociologist has no right to observe those who have not given their consent. I suggest that the sociologist has the right to make observations on anyone in any setting to the extent that he does so for scientific purposes. The goal of any science is not to harm subjects, but the advancement of knowledge. Any method that moves us towards that goal without unnecessary harm to subjects is justifiable (p.333).

As Denzin stated, his view was not universally accepted by fellow writers and it would be hard to justify taking this line in studies similar to the present research. For the present writer the concept of the bargain is unquestionably the correct ethical stance in studies of this kind.

4.3 RESEARCH MEASURES

4.3.1 Classification of Measures

Reviewing some of the principal studies of executive behaviour, J. Kelly (1966) described three methods of study which had been used. These were the self-recording technique, an objective study by an outside observer, and activity sampling. A similar classification was used by the present

writer, and the methods were evaluated against a set of seventeen criteria (Austin, 1982). In both cases the writers were referring to studies of activities, although in a fourth category mentioned by Austin, estimation, there was an opportunity for the researcher to obtain background information in an interview. A more comprehensive classification was proposed by Mintzberg (1973) to cover studies in managerial work, a slightly broader term intended to include the content of the work performed. His categories were: secondary sources, questionnaires and interviews, critical incidents as well as diary, activity sampling and observation (both unstructured and structured).

On a broader canvas, there have been several classifications proposed for methods of assessing personality. In this case Kelly offered little help in stating that the basic categories of research in the social sciences were observation, interviewing and the analysis of documents. These may have been the principal methods used in observing organisations, which was the focus of this particular article, but as a list of basic categories of research in the social sciences this is quite inadequate. Surveying methods of assessment of personality, Allport (1963) referred to a simple framework originally proposed by Rosenzweig (1948), who classified methods under three rubrics: subjective, objective and projective techniques. He compared this with a similar

threefold scheme of Super (1959) with the categories: observational, projective and self-description methods.

Allport himself thought these schemes too coarse and proposed his own classification with eleven categories. Some of Allport's categories fall under the Rosenzweig scheme:

- self-appraisal, ratings tests and scales and depth analysis can be subsumed under subjective techniques;
- conduct sampling and expressive behaviour can be described as objective techniques.

In addition to projective techniques he classified separately: constitutional and physiological diagnosis, socio-cultural setting, personal documents and case studies and synoptic procedures.

In Harré and Lamb (1986) a further classification was given under the heading of 'personality research: methodology'. Subjective techniques mentioned were: interviews and questionnaires; naturalistic (rather than clinical) observation represented objective methods; projective techniques were included with biophysical assessment and behavioural approaches under a heading of personality tests. Content analysis of both oral and written communications was

also mentioned, as was experimental method.

Although there is much to commend a classification which takes into account differences of technique or method, the purpose of this thesis is probably best served by the simple scheme of Rosenzweig which separates those methods which involve the subject in the assessment from those which are dependent only on the researcher and are hence more objective. The separate category of projective techniques is conceived as an interpretative category. Accordingly measures appropriate to this research will be discussed under the headings of subjective, objective and projective techniques.

4.3.2 Criteria for the Selection of Measures

In establishing criteria for the selection of measures appropriate to this research, it was necessary to consider the characteristics of the population being studied - the managers who were to be the participants in the study. Particularly in cases in which psychological measures were being used, the majority of published studies have involved as subjects students enrolled in psychology degree courses or similar. In contrast managers, who constitute the population studied in this research programme:

- are mature rather than adolescent;

- are experienced in the realities of organisational life;
- are pragmatic rather than academic in orientation;
- may regard this research as irrelevant;
- have a wide range of intellectual capacity.

Pfeiffer and Heslin (1973) listed a number of criteria which should be satisfied by measures to be used in any research programme. The particular requirements in the present research, imposed by the characteristics of the managers to be studied, have modified Pfeiffer and Heslin's list. The major requirements can be described as follows:

Validity. Face validity was clearly a major requirement as the respondents were likely to be critical, if not cynical, because of their predominantly pragmatic views. Construct validity, always important to the researcher, was also important for the subjects in this research as an obviously sound theoretical base gave credibility to the measure. Because of the role of the personality variable in this research, predictive power was also of particular importance.

Complexity. From the viewpoint of the subject, complexity was

related to validity, in the sense that any measure which needs complicated interpretation loses credibility. On the other hand, a measure which appeared direct and from which clear feedback could be obtained from the items was likely to be accepted.

Time. Participation in any part of this research had to be on a voluntary basis, and willing commitment to a programme using a measure requiring much time for completion would be reduced.

Sophistication. Only those measures which the skills of the present researcher allowed him to operate could be considered for this research. This requirement relates also to complexity because the subjects would be sensitive to anything they might regard as over-sophisticated.

With these criteria clearly in mind, it would be possible to reject or accept a proposed measure for use in the research.

4.3.3 Subjective Techniques

These techniques in Rosenzweig's (1948) classification include any form of self-report, such as diaries, interviews and questionnaires. The principal advantage of involving the subjects in such techniques is that the data are not simply bald statements of fact but carry interpretation as supporting

information. In subjective techniques this interpretation is made 'by a man who knows what he is doing' (Stewart, 1967, p.11). Because of this, subjective techniques are particularly indicated for assessing attitudes.

These techniques require some self-knowledge, which is not a great disadvantage in the present research but may be so when the subjects are of lower than average intelligence. The principal disadvantage is concerned with reliability; for whatever reason subjects may not always tell the truth. This may take the form of simple exaggeration, in painting the information in unduly glowing, or unduly dismal colours; it may take the form of saying what the researcher wants to hear, which is an example of the social desirability set (see for example, Kline, 1981, p.32).

Diaries. Diaries are very appropriate for activity studies (see Section 1.3.1), providing a self-report on behaviour. They have not been employed as such in this research, but all of the managers who took part in the integrative study (see Chapter 7) had already completed a diary as part of their general management course. Because of this a brief discussion is in order.

Diaries are very simple to administer and with good design can yield information in a structured form. However, Hanika

(1963) recognised the deficiencies of the diary method and recommended careful pre-classification and clear definitions of how to deal with borderline situations. Many of the earlier published studies were criticised by Marples (1967) because errors of interpretation, although great, were usually unquantified; because the focus on individual episodes gave information on input which was unrelated to output; and because of the lack of theoretical basis for the studies. He recommended prior specification of allowable limits of error in interpretation, the study of the connections between episodes and their purpose and, above all, the development of a substantive theory of managerial work.

The present writer has used the diary method as an aid to self-improvement, with a series of diary forms in a two-stage pattern, which enables the users to select the forms most appropriate to their purposes (Austin, 1979).

Activity sampling is normally regarded as a form of direct observation, but the principle of random selection of activities can also be a form of self-report. Equipment is available (such as is marketed under the name of Frequensor) which gives a signal at random intervals, upon which the subject punches a computer card according to a three-part classification of the activity. Feldman's (1977) study is one of the few studies to have used similar equipment.

Interviews. The interviews conducted during this research have been semi-structured, sometimes termed 'non-schedule-structured'. The aim in both sets of interviews has been to encourage the subjects to express their ideas in their own words, which they would be inhibited from doing if the interview were controlled by a schedule of questions. A certain measure of interviewer control has been necessary, however, because views were required about a range of topics and completely free discussion would be too time-consuming for subject and interviewer alike.

Nachmias and Nachmias (1976) have pointed out that the non-schedule-structured interview is normally used with subjects who have all been subjected to a similar experience. This is exactly the case in the integrative study in which the subjects shared the experience of having been on one of the general management courses and having followed that by completing the questionnaires described in Chapter 7.

Interviews, particularly if not constrained by a limiting schedule, have the advantage over any kind of recording that they allow an understanding to develop between interviewer and subject, which encourages the flow of ideas referred to above. Observer bias, which is a potential danger, can be reduced, as in this research, by seeking always to phrase questions in the same non-directive way. As the interview progresses, however,

and probing is indicated, it is more difficult to maintain strict objectivity. The extent to which an interviewer should express views is a debatable point. Bogdan and Taylor (1975) expressed their opinion in these words:

It is probably unfair and undoubtedly counter-productive for the researcher to completely hold back his or her own feelings . . . somewhere between total self-disclosure and total detachment lies the 'happy medium' (p.108).

In the interviews conducted during the integrative study this was an important issue since, as part of the bargain, the interviewer had offered counselling on overcoming obstacles to time management. By leaving discussion on obstacles to the last topic of the interview, the interviewer was able to postpone his most significant interventions until they were unlikely to affect responses by the subjects.

Questionnaires. Information for both main strands of the present research was obtained from the completion of questionnaires. They provide such a convenient form of data-collection, taking little time to complete and, if well-designed, being easy to score, that it is easy to forget possible pitfalls. In Oppenheim's words:

A questionnaire . . . is essentially a scientific instrument for measurement and collection of particular kinds of data. Like all such instruments, it has to be specially designed according to particular specifications

and with specific aims in mind, and the data it yields are subject to error (1966, p.2).

One of the options in questionnaire design, the way in which questions are asked, has been given point by a debate between investigators using the Rotter locus of control scale. The original scale, as described in Section 3.4 made use of forced-choice questions. Investigators such as Collins (1974) and Levenson (1974) have pointed out that the alternatives are often not direct opposites, which introduces potentially different perceptions by the subjects making the choice. In the two cases just mentioned, the investigators used both options in a new questionnaire, using an agree-disagree format for responses. The forced-choice format eliminates the central ('Don't know') option; subjects will differ in the way they respond to this, if they genuinely have no opinion. Some may deliberately invalidate their response so that it cannot be scored (as was done in the integrative study; see Section 7.4); others may mark an option which may not truly represent their opinion, a source of error which it is difficult to overcome.

The other two questionnaires used in the present research have used different question formats. In the case of the Time Questionnaire respondents are offered a seven-point scale on which to record the extent to which they agree with the statement (see Section 5.4). This has the advantage in an

attitude questionnaire that it allows for shades of opinion rather than forcing an unnatural black or white choice. The intervals between the points on the scale are arbitrary, and arbitrary scales are sometimes regarded as unreliable. In the case of the Time Questionnaire, doubt about unreliability has been resolved by normalising the scores on each question before factor scores are calculated.

In the case of the Obstacles Questionnaire described in Section 7.2.3, respondents are asked in an open-question format to describe what they have done. This encourages some of the advantages of an interview without close structure although it lacks the facility of probing for clarity. Free responses are, of course, much more difficult to analyse; the classification used for the Obstacles Questionnaire is described in Section 7.2.3.

4.3.4 Objective Techniques

A major disadvantage of subjective techniques is that results can be falsified, as discussed in Section 4.3.3. Objective techniques, of which the purpose is hidden from the subject and which can be objectively scored, overcome this disadvantage but, as Kline (1981) has pointed out, this very fact makes it difficult to establish their validity. Scores are claimed to correlate with personality traits, which makes

them inappropriate for the present research. In addition, the nature of the tests would not satisfy the criterion of face validity set out in Section 4.3.2.

Direct observation is classified here; unlike the objective tests just referred to, observation would be acceptable to the subjects of this research from the viewpoint of validity. It is particularly appropriate to studies of managerial work, having been used, for example, by Carlson (1951) and Mintzberg (1970). It is also indicated to establish categories of classification as a prelude to a diary study: it was used by the present writer for this purpose (Austin, 1975).

The main advantage of direct observation is that every detail of the activity can be recorded objectively, including such things as the mood of the subjects during transactions as evidenced by, for instance, body language. It is expensive in observer time but would certainly be used in studying the relationships between attitudes, as analysed during the present research, and actual temporal behaviour.

4.3.5 Projective Techniques

Projective Techniques are disguised and ambiguous procedures using a wide variety of stimuli, and evoking a wide range of responses. These techniques derive from psychoanalytic theory and require the researcher to interpret results in terms of underlying personality dynamics. The most commonly used tests are the Rorschach inkblot test and picture interpretation tests such as the TAT. The rationale of projective tests has been described by Kline (1981) as:

intuitively brilliant: if a stimulus is so vague that it warrants no particular description, then any description of it must depend on what is projected on to it by the subject (p.34).

Certain investigations concerning aspects of time have made use of the TAT, including time perspective, referred to in Section 2.2. As a technique it does not satisfy the criterion of face validity from the point of view of the managers who are subjects in the present research.

4.4 REVIEW OF METHODS USED

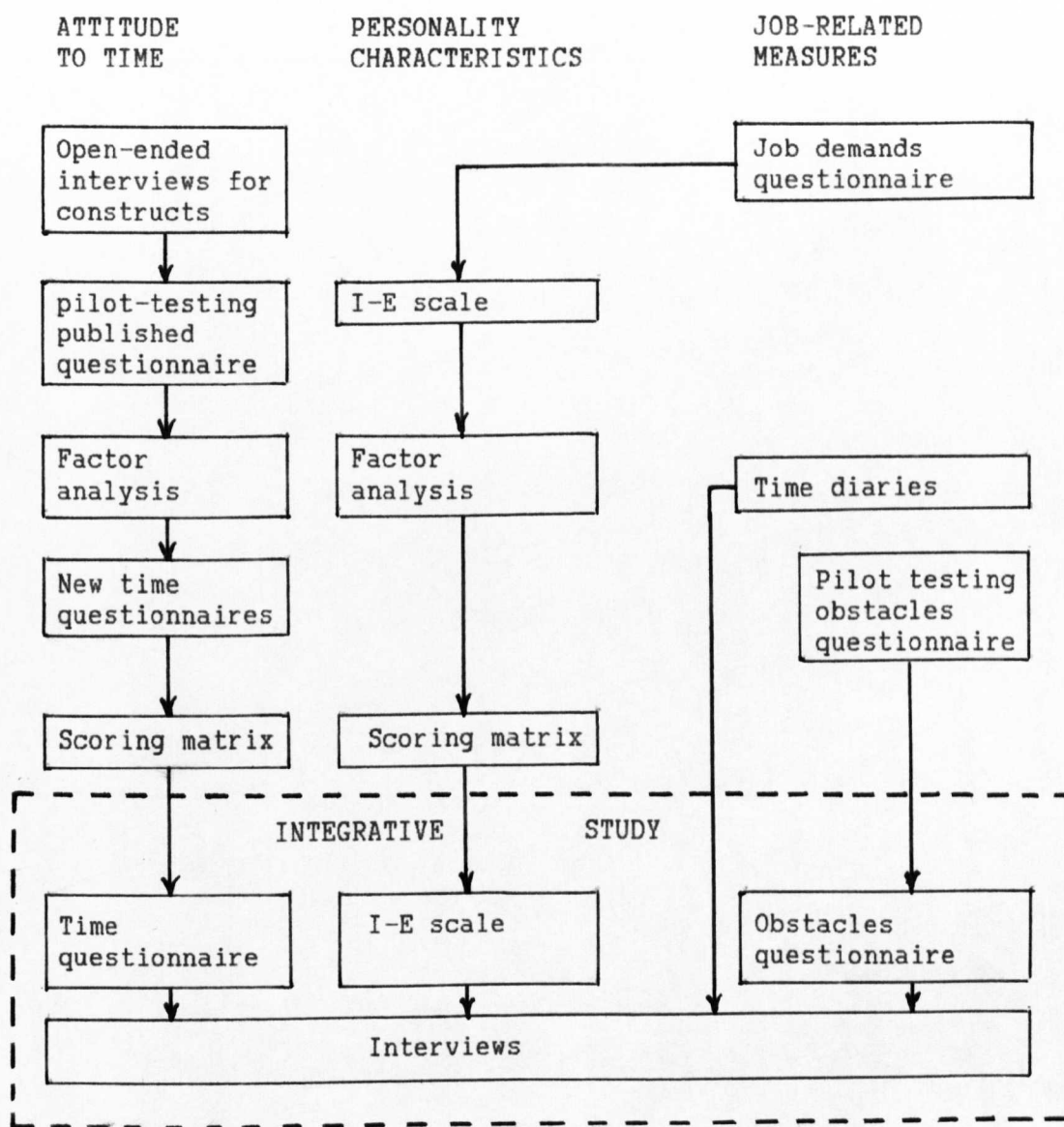
An overview of this research indicates that it is an exploratory rather than a hypothetico-deductive study. The

origins of the study were too general to allow any specific hypotheses to be developed, even after considerable desk research. The general principles of grounded research fit the sequence of exploration and partial discovery reasonably well, although it has to be acknowledged that the conclusions stop short of tested hypotheses. The actual methods used can be illustrated by reference to the research model in Figure 4.4.

It has been shown that neither projective nor objective techniques have been used in this research, although direct observation methods would be a necessary part of any extension of the study into the assessment of actual temporal behaviour. All the methods used, therefore, are subjective techniques. As the two principal instruments used are both questionnaires, there is an element of weakness in the conclusions which emerged from the relationship of these two instruments. In the integrative study the research has been nearer to the ideal described by Denzin (1970) of a triangulated study, in which different methods are brought into play to investigate the same aspect. In the case of the integrative study, the interviews added considerably to an understanding of attitudes, and explained the scores obtained on the questionnaires.

FIGURE 4.4

MODEL OF RESEARCH METHODS USED

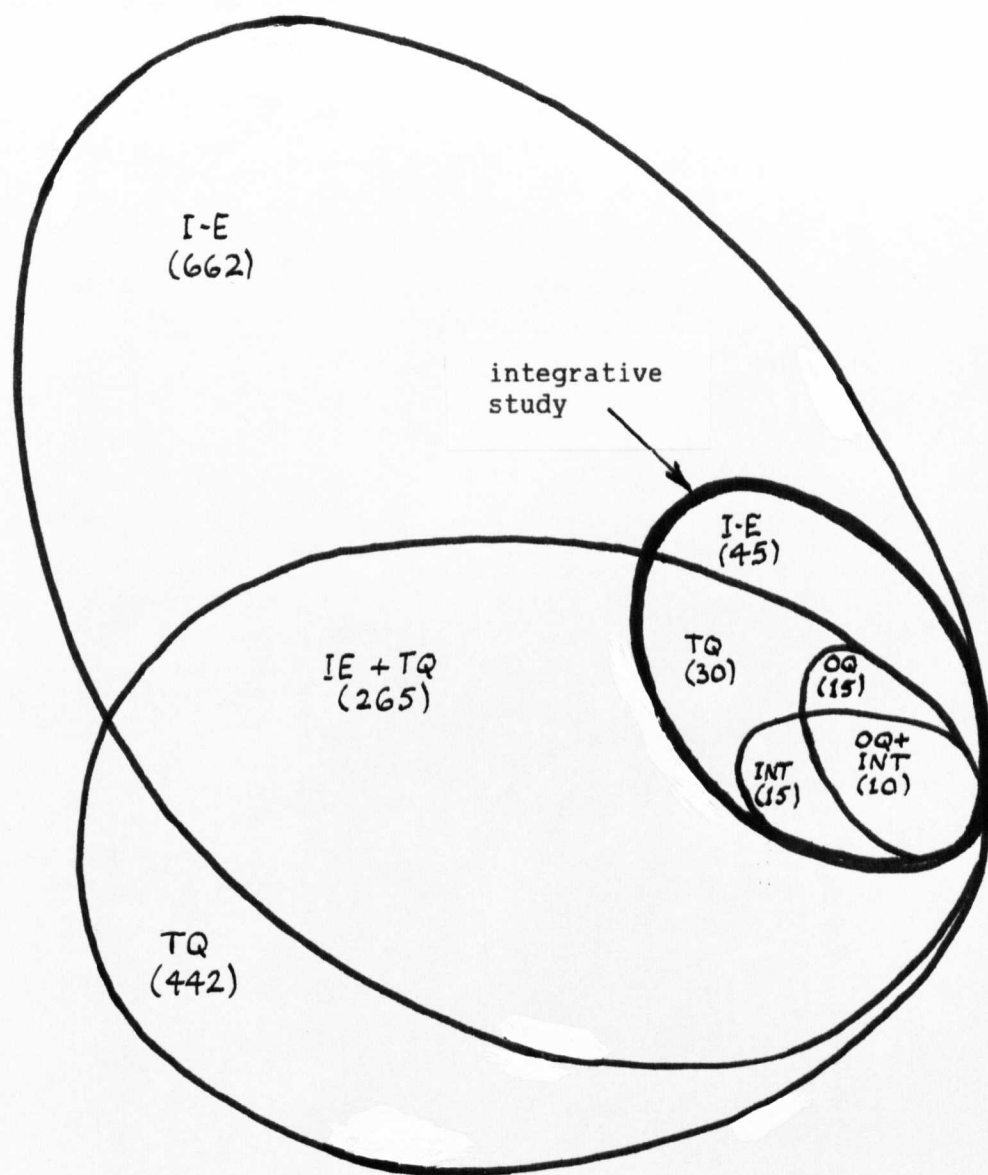


The actual numbers involved are shown in diagrammatic form in Figure 4.5. In the integrative study, as the diagram shows, the three instruments (the I-E scale, the TQ and the Obstacles Questionnaire) were issued in succession only to those who returned the previous questionnaire complete.

This research concerns attitudes held by managers, and the very nature of their employment places a considerable limitation on their availability for the various stages of a research project. The researcher has consistently endeavoured not to impose on their goodwill and has invited collaboration only when this could be given without annoyance. As a result administering the questionnaires has been an example of opportunistic, rather than systematic, research. With this thought in mind it is contended that the lack of congruence of the samples studied represents the reality of research. It is further contended that the number of subjects who completed both the locus of control scale and the Time Questionnaire is substantial enough to provide a reasonable test of possible relationships between the two instruments.

FIGURE 4.5

VENN DIAGRAM SHOWING SAMPLES INVOLVED



Notes: The figures represent the number of subjects
I-E - I-E scale
TQ - time questionnaire
OQ - obstacles questionnaire
INT - interview

CHAPTER FIVE

TIME QUESTIONNAIRE

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5.1 INTRODUCTION

Earlier studies by the present writer involved the use of self-report diaries for analysing the apportionment of time between different activities (see, for example Austin 1975, 1979). During the search for respondents it became clear that the idea of keeping such a record was differently received by different people. Reactions ranged from enthusiastic co-operation, through grudging agreement ('I'm doing this as a personal favour to you'), or faint-hearted support ('If you leave it with me I'll see what I can do'), to a nil return or outright refusal.

The logical base which the researcher had used for teaching managers was as follows:

- time is a resource;
- managers should use their time effectively;
- they should know how their time is allocated now;
- they should change this allocation if necessary.

Enthusiastic co-operation with the time diary projects came usually from managers who embraced this logical base. The essence of the logical base could be accepted also by managers who, on other evidence, were effective in their jobs but who were unwilling to commit themselves to a demanding regime of recording. Informal discussion made clear that individuals differed greatly in their perception of effectiveness, in

their desire for self-knowledge, in their preparedness to keep records - indeed in their attitude towards time itself.

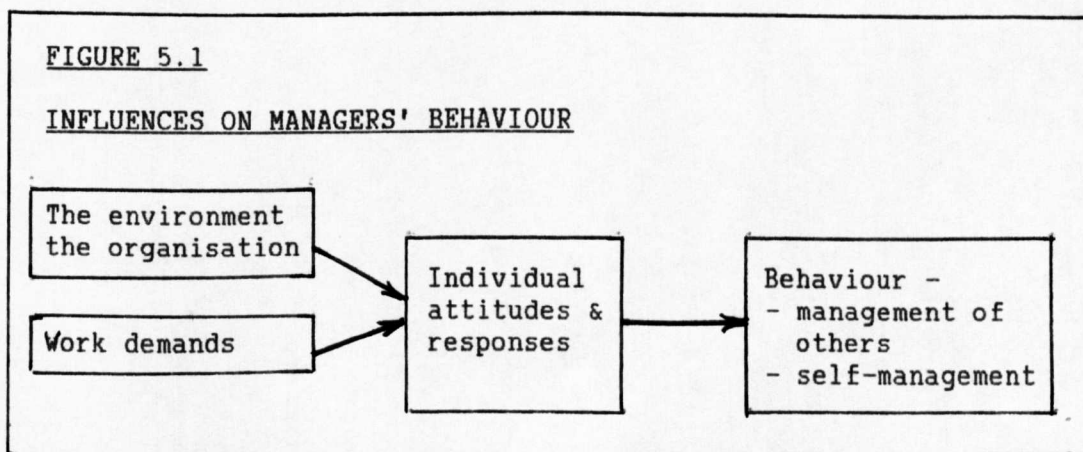
It was to explore these individual differences that, as one of the first activities of the present research programme, a pilot study was set up based on depth interviews with the minimum of structure, to allow individuals' ideas to be expressed in their own terms. Four interviews were conducted, two with people who had already taken part in a time diary project, one with a manager who was sympathetic to the projects but who had not taken part, and one with a manager who tried to keep a record but failed to complete. In each case the interview was recorded and transcribed verbatim.

There were four areas into which discussion was channelled:

- attitude towards time in life generally, its origin and significance;
- attitude towards time at work - difficulties and problems and action taken;
- effectiveness, its meaning and significance for the individual;
- long-term objectives.

In addition the two managers who had taken part in the time diary project were asked about their experience in using it. From the transcripts a total of 443 pieces of information (significant or revealing phrases, statements, ideas, illustrations) were isolated and subjected to a simple content analysis, following the method advocated by Belson (1980). The classification which emerged, shown in Appendix 5.1, was intended as a coding frame for future use.

The coding headings have been arranged in groups in order to correspond with the general model governing behaviour as used through this study. The groups were renamed: 'the environment and the organisation'; 'sources of work demands'; 'attitudes and emotional responses'; 'behaviour-management of others'; and 'behaviour-self-management'. This model, which can be seen to be basically similar to the model of Mintzberg's contingency theory of managerial work shown as Figure 1.2, is shown in Figure 5.1.



The ideas generated by these interviews were intended to form the basis of a research instrument but the design of the instrument was suspended to allow time for searches in the literature for references to similar instrument developments. The Wessman Temporal Experience Questionnaire (TEQ), which is shown as Appendix 2.1, does in fact echo two significant headings of the coding frame of Appendix 5.1: 'Attitudes and emotional responses' and 'Behaviour - self-management'. There are also many references to 'Sources of Work Demands'. Because of the very close relationship between the questions in the TEQ and the theme of the present research, it was selected for further development.

In an unstructured way, the ideas arising out of the interviews have had a formative effect on the present researcher's attitude of mind, by removing some preconceptions and raising new possibilities.

5.2 RE-TEST OF THE TEQ

The questionnaire was reconstructed in the form described in the Wessman paper and called 'Time Experience Questionnaire', a copy of which is shown as Appendix 2.1. The terminology of the questions was checked for clarity with each of the first four groups to whom the questionnaire was administered last

American usage should be misunderstood in Britain. In fact no alteration was found to be necessary. It is to be noted that this could not be a complete replication of the Wessman study as it was not possible to obtain the full list of 201 items which he used; the present test was therefore confined to the 80 questions on the published TEQ. The questionnaire used is reproduced as Appendix 5.2.

For two reasons this re-test was thought to be useful. The Wessman study was carried out with undergraduate students of Harvard and Massachusetts Institute of Technology and the Harvard Psychological clinic. In contrast the subjects involved in the present study were all employed in managerial positions, mostly in the early stages of a managerial career, and all attending courses at Leicester Polytechnic. The managers concerned were employed in local government, the health service and also industry and commerce. Other distinctions between Wessman's work and the present study are any difference in value systems attaching to the different countries, and changes over the time elapsed since publication. It was thought that these differences might cause different weights to be placed on the questions used.

The data presented here were built up over a period of fourteen months. To give some indication of the variation between subjects and the extent this was related to their form

of employment, separate records were kept for each of the thirteen different groups of students who collaborated with the study. Table 5.1 shows the employment and the type of course attended. The designation 'mixed' means that course membership was drawn from local government, health service, industry and commerce.

TABLE 5.1

SUMMARY OF THE EMPLOYMENT AND COURSE ATTENDED BY SUBJECTS IN THE PRESENT STUDY

		No. of subjects	Employment	Course
Group 1	*	8	local government - housing	seminar
Group 2		16	health service	short course
Group 3		19	local government	short course
Group 4	*	17	health service - pharmacists	short course
Group 5	*	4	local government - O&M	short course
Group 6		11	local government	short course
Group 7		11	mixed	3-year master's programme
Group 8		17	local government	short course
Group 9	*	15	mixed - librarians	seminar
Group 10		26	mixed	3-year diploma programme
Group 11		18	mixed	3-year diploma programme
Group 12		9	local government	short course
Group 13	*	9	health service - phamacists	short course

* are groups where all subjects come from a relatively narrow range of disciplines.

Total subjects from	local government	68
	health service	42
	mixed	<u>70</u>
		<u>180</u>

Total subjects on	short course/seminars	125
	3-year programme	<u>55</u>
		<u>180</u>

The keeping of separate records for the different groups who participated in this particular study has made it possible to compare results of similar groups, thus giving further information on the extent to which people in managerial positions hold beliefs or attitudes as a result of their job. As the TEQ allows consideration of four different aspects of the subjective experience of time, these comparisons can be made for each aspect. The meanings given to the four factors can be re-stated in the following form, with the high-scoring pole quoted first:

Factor I - harassed lack of control vs. relaxed mastery and adaptive flexibility;

Factor II - continuity and steady purpose vs. discontinuity and lack of direction;

Factor III - efficient scheduling vs. procrastination and inefficiency;

Factor IV - inconsistency and changeability vs. consistency and dependability.

(Interpretation of the factors was given in Section 2.3.4., and the full schedule of items in Appendix 2.1).

Table 5.2 shows the mean and standard deviation for each of the thirteen groups. The scores represent the algebraic sum of scores on items under each factor, with the addition of a constant of 60 to each factor score to eliminate negative figures. The single word attached to each factor indicates the meaning of a high score on that factor.

TABLE 5.2

FACTOR SCORES FOR EACH GROUP

	n	Factor I harassed mean s.d.		Factor II purposive mean s.d.		Factor III efficient mean s.d.		Factor IV inconsistent mean s.d.	
Group 1*	8	50.1	14.4	85.4	6.1	80.5	14.7	36.4	10.8
Group 2	16	46.8	8.3	73.4	11.0	71.4	14.9	40.9	11.3
Group 3	19	46.8	12.2	76.8	14.9	73.8	17.3	41.8	13.3
Group 4*	17	52.7	13.3	76.8	10.3	71.4	13.6	41.5	11.9
Group 5*	4	60.5	9.5	58.5	22.9	59.5	16.8	58.0	14.1
Group 6	11	42.5	13.3	77.5	12.7	75.5	18.5	41.3	14.2
Group 7	11	43.3	12.0	73.5	21.0	75.5	24.5	40.0	14.2
Group 8	17	50.1	12.8	79.6	15.3	76.6	10.3	41.9	15.7
Group 9*	15	56.5	11.2	70.1	18.5	58.3	25.6	47.6	15.8
Group 10	26	51.4	12.6	70.8	14.7	64.9	15.8	50.5	13.0
Group 11	18	53.8	14.3	79.2	14.0	75.1	13.4	45.7	14.3
Group 12	9	46.6	12.8	79.2	10.9	79.1	17.1	40.7	13.3
Group 13*	9	60.2	11.1	72.2	16.9	62.0	15.9	41.4	12.6
All subjects (n=180)		50.0	12.9	75.3	14.9	71.1	17.6	43.8	13.8

* are groups where all subjects come from a relatively narrow range of disciplines.

Selection of the groups to participate in the study was on an opportunistic rather than a systematic basis and as a result the data serve principally to allow speculation. For instance the housing officers in group 1 appear to be strongly

purposive, efficient and consistent. By contrast the O & M officers of group 5 appear strongly harassed, with lack of direction, procrastination and inconsistency.

Analysis shows that for each factor the highest and the lowest scores are significantly different ($p < 0.05$ on Student's t test) but other differences do not exceed what one would expect from chance. It should be mentioned that the t test formula used is based on the distribution of means, which is normal, irrespective of the distributions from which the means are derived. In fact, factor I scores are distributed normally and factor IV scores have a symmetrical, if flattened shape. Factors II and III, however, are negatively skewed.

It would be tempting to paint a scenario which would lend apparent credibility to the scores returned by some of the groups and thus show strong job-relatedness. Even comparison between groups 4 and 13, however, which comprise pharmacists drawn from the same population, shows differences which appear substantial, although not significant at the 0.05 level. There is little to suggest, therefore, that any of the groups are not drawn from the same population; in other words, there seems to be little evidence that any differences between groups are significantly job-related. This is consistent with Wessman's own analysis of results, which concentrates on relating scores to individual differences as revealed by other

psychological measures.

One further analysis provides interesting results. The scores of groups were combined by sector and differences were tested for significance. The resulting scores are shown in Table 5.3 and the differences which are significant at 0.05 level are depicted in Table 5.4.

TABLE 5.3

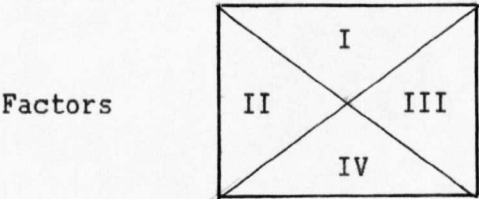
FACTOR SCORES FOR EACH SECTOR

	n	Factor I harassed		Factor II purposive		Factor III efficient		Factor IV inconsistent	
		mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Local Gov't	68	48.1	12.9	77.9	14.5	75.4	17.5	41.9	14.1
Health Service	42	52.0	12.0	74.5	12.0	69.4	14.8	41.3	11.5
Mixed	70	46.7	13.1	73.3	16.5	67.9	20.0	47.0	14.4
Total	180	50.0	12.9	75.3	14.9	71.1	17.6	43.8	13.8

TABLE 5.4
SIGNIFICANT DIFFERENCES BETWEEN SECTORS

	Local Gov't	Health Service	Mixed
Local Gov't		.05	.03
Health Service			.05
Mixed			.04

Notes: Mirror image probabilities are not shown.
Probabilities for the four factors are shown in this order:



The interest in these figures arises from the speculation that there is a different ethos in the public sector which makes working in it different from the private sector. This different ethos has been noted by many managers in personal contact with the present writer who have changed employment from private practice to local government. The difference is sufficiently marked, in the opinion of these managers, to affect their approach to their work.

This study did not set out to test this comment as a hypothesis but the results, obtained as a by-product of the study itself, are potentially valuable. The fact that significant differences were observed between the mixed groups and both the local government and the health service groups, in each case on two factors, is not inconsistent with such a hypothesis. However, significant difference between local government and health service on one factor suggests that the evidence is by no means conclusive. The results do suggest that a systematic test of a hypothesis of this nature would be worth conducting at a later date.

5.3 NEW FACTOR STUDIES

5.3.1 Interpretation Guidelines

The next stage in the present study was the re-factorising of the data obtained. One reason for this was the fact that a factor structure deriving from students cannot necessarily be said to apply to managers. Another was the very low case per item ratio used by Wessman. As mentioned in Section 2.3.4, Wessman used only 110 subjects for a total of 201 items, a ratio of little more than 0.5:1. The present study has involved 182 subjects for the reduced questionnaire of 80 items, a ratio above the guideline of 2:1 (Elliott, 1983). Either of these reasons would justify a new factor analysis.

Before the details of the new factor studies are described, it is appropriate to comment on the use of factor analysis as a guide to the interpretation of data. As a mathematical technique, factor analysis has a clearly defined procedure and from the results one can estimate the confidence levels of the relationships between items and the factors with which they have been associated. The way in which these relationships are used and interpreted, however, is a much more subjective matter. As Cattell (1978) has said, one cannot expect social scientists to be satisfied with factors which are mere mathematical conveniences.

Guidelines do exist to cover two of the controversial issues: the choice of the number of factors to be used in the structure; and the selection of the items to be included in the definition of each factor. There is good agreement on the first of these issues; factors should continue to be extracted until the size of the eigenvalue (sometimes called the latent root) falls below 1.0 (see, for example, Cattell, 1978).

On the second issue Gorsuch (1974) maintained that the minimum correlation coefficient between items (significant at the 0.5 level) should be about 0.2; this would mean a minimum factor loading of 0.4 for an item to be interpreted. The figure was given for a sample of 100; if it was desired to interpret as

low as 0.3, the sample size would need to be 175. Comrey (1973), on the other hand, suggested that a common factor loading cut-off point was 0.3 although he qualified this in later discussion. An item with a loading of 0.3 has a variance in common with the factor equal to the square of the loading, in other words 9%. If this item is allowed, this means that the 91% of the variance which is not in common with the factor will in fact be attributed to the factor. From this argument Comrey developed a scale on which he rated:

- 10% of variance (loading 0.32) as poor;
- 20% of variance (loading 0.45) as fair;
- 30% of variance (loading 0.55) as good;
- 40% of variance (loading 0.63) as very good; and
- 50% of variance (loading 0.71) as excellent. (p.226)

Two further guidelines were suggested by Comrey: that there should be at least five 'good marker variables' for each factor anticipated (p.209) and that 'only a few multiple factor data variables should be used' (p.210). This last guideline stresses the value of factorial independence. The differences between some of the guidelines emphasises the subjective nature of the criteria used in interesting factor analytic data. As the word is 'interpretation', Elliott (1983) had emphasised that it should be the meaning which an item adds to the description of the factor which should be the final arbiter, rather than a rigid mathematical formula. In interpreting the factor analytic data obtained in the present study all these guidelines have been taken into account. In cases where a less than ideal solution has been taken, the reason for doing so will be explained.

5.3.2 First Factorisation

When the factors were listed, seventeen factors in all had eigenvalues exceeding 1.0, accounting for 69.7% of the variance. Two of these emerged as outstandingly the major factors involved, both with eigenvalues exceeding 10.0 and accounting together for 38.0% of the variance. In an attempt to make comparisons with Wessman's study, an analysis was carried out on only seven factors, seven having been used initially by Wessman, accounting for 53.8% of the variance.

One finding from inspection of the rotated factor matrix was the small number of negatively loaded items, and the low values these had in comparison with the positively loaded items. It was concluded that simple, rather than bipolar, factors must be used to interpret these particular results.

A more detailed examination of the seven-factor rotated matrix revealed a partial agreement with Wessman's classification. This is shown in Table 5.5, the comparison being based as follows:

As Wessman's factor I positive contained ten items, the comparison in Table 5.5 is with the ten most positively loaded items in this study's factor 3. Similarly, the comparison with Wessman's factor I negative is with the ten most negatively loaded items in each of the factors in this study, only three of which were found in factor 3.

TABLE 5.5

COMPARISON OF SEVEN-FACTOR MATRIX WITH WESSMAN'S FACTORS

<u>Wessman's classification</u>	<u>This study</u>
Factor I positive (harassed lack of control)	7 items in factor 3
Factor I negative (relaxed mastery and adaptive flexibility)	3 items in factor 3 and 1 item each in factors 4, 5, 6 and 7
Factor II positive (continuity and steady purpose)	2 items in factor 1 (and 3 further items ranked 12th equal)
Factor II negative (discontinuity and lack of direction)	3 items in factor 1 and 3 items in factor 6
Factor III positive (efficient scheduling)	3 items in factor 1 (and 3 further items ranked 12th equal)
Factor III negative (procrastination and inefficiency)	6 items in factor 1
Factor IV positive (inconsistency and changeability)	7 items in factor 4
Factor IV negative (consistency and dependability)	6 items in factor 4

A review of the table shows some relationship between Wessman's factor I positive and this study's factor 3; between Wessman's factor III negative and this study's factor 1; also between Wessman's factor IV and this study's positive and negative items in factor 4. Other comparisons are mixed, to a greater extent than one might have imagined as Wessman's bipolar factors in effect represented eight factors in total,

compared with the seven of this study.

The comparison could have been continued by extracting four factors as Wessman had done but it was thought from the original comparison that there was little likelihood of close agreement. Accordingly the present data were re-examined with a view to establishing a new factor structure independent of Wessman's.

The loadings on factors 1 - 4 were high; it was possible to extract eight items from each of them with only three items loading less than 0.50. Factor 7 contained four items loading more than 0.30 but three of these loaded much more highly on factor 1 and one on factor 2. Consequently factor 7 was abandoned. Factor 6 contained six items loading above 0.30 but they were all mixed items, loading at least equally on other factors, and so factor 6 was also abandoned. Factor 5 contained six items loading 0.30 and two others 0.28 which, although they also loaded not inconsiderably on other factors as well, contained several items which bore on attitudes not readily identifiable in factors 1 - 4. It was decided to search for a five-factor structure, although factor 5 appeared weak compared with the others.

This preliminary analysis yielded a forty-item set, with five eight-item factors. Appendix 5.3 shows the seven-factor

rotated matrix, with the forty items selected for further analysis underlined.

5.3.3 Second Factorisation

A second factorisation was then carried out, using the reduced number of forty items, in order to test whether a reasonably interpretable structure would emerge. After rotation it was found that the variance was more evenly distributed than for the first factorisation. On this occasion the first five factors were responsible for 44.2% of the total variance, the actual figures being shown in Table 5.6.

TABLE 5.6

SUMMARY OF THE FORTY-ITEM FIVE-FACTOR ANALYSIS

<u>Factor</u>	<u>Eigenvalue</u>	<u>Percentage of variance</u>
1	7.6	19.0
2	3.3	8.3
3	2.9	7.3
4	2.1	5.2
5	1.8	4.5

The rotated factor matrix was examined with a view to selecting items which could be used to interpret the factors. In Section 5.3.1 guidelines for selection were discussed and, as a first trial, items were selected which had a minimum

loading of 0.4 (corresponding to 16% of the variance). These items are shown in Table 5.7; where loadings exceeded 0.2 on another factor as well 'corresponding to 4% of the variance', these loadings are also shown. If the guidelines are followed exactly, by not including those items which load appreciably on another factor, the number of items which should be used for interpretation of the five factors are, respectively, four, two, five, three and one.

TABLE 5.7

ITEMS LOADING ON A FIVE-FACTOR STRUCTURE

Items loading 0.4 are marked X

Items loading 0.2 on a second factor are marked 0

TEQ/Factor No.	1	2	3	4	5
2		X			
6	X				
9				X	
14	X				
15					
17				X	
20			X		
22					
24					
27					
29		X			
30	X	0	0		
31					
33				X	
35					
36			X		
37				0	X
38					
39					
41	0			X	0

TABLE 5.7 (contd)

TEQ/Factor No.	1	2	3	4	5
44					
45					
46					
52			X		
54	X				
56					
57		0		X	
59	0	X			
60					
62	X				
64	0		X		
65	X	0			
67	0	X			
68	0		X		
69					
71					
72					
73		0	0	X	
79	0	X		0	
80					

Simply to use these guidelines blindly was thought to be inappropriate to the real purpose of interpretation and an attempt was made to balance the contribution of the five themes represented by the five factors. In factor 1 items 14 and 62 had virtually identical meanings; item 62 was retained, leaving three items in factor 1. In factor 2 item 59 had a meaning complementary to items 2 and 29 and it was retained. Factor 3 contained five items, of which three were selected as being the best set to represent this theme. Three satisfactory items were retained in factor 4. Factor 5 is the

least satisfactory statistically and the option of abandoning it was considered. However, the theme represented by the items loading most highly on it was not represented elsewhere in the matrix and a decision was made to include two items which did not satisfy the guidelines; item 27 loaded 0.39 and item 37 loaded 0.27 on another factor. This factor may seem unsafe but it is included with a caveat to be borne in mind when the questionnaire results are being interpreted. The full factor matrix is shown in Appendix 5.4.

5.3.4 Discussion

At first sight this factor structure bears little resemblance to Wessman's. A major feature of what is reported here is that the analysis is statistically based, judgment being involved only in the marginal decisions on the omission or retention of a few items. Whether this also applies to the Wessman study is not known, as statistical details are not available.

Initially some disappointment was felt over the relatively small number of items which satisfied the statistical criteria. It seemed that the power of the instrument to discriminate between subjects might be too low. However, the extent to which subjects identify themselves with each item is recorded on a seven-point scale, giving a range of eighteen

points on each of five factors, which should be quite satisfactory. Indeed on one pilot test with thirteen respondents the range of scores recorded for each of the five factors was 3-14, 7-18, 6-17, 7-18 and 6-14.

Turning to the factors themselves, the following comments relate the new factorisation to the original Wessman study.

Factor 1 : 'philosophy of life'. A high score on this factor would indicate a feeling of helplessness. Loadings are strongly positive on this factor, which explains nearly half of the variance, suggesting a widespread sense of frustration in the sample. All three items are found in Wessman's factor II negative (discontinuity and lack of direction).

Factor 2 : 'organisation'. The three items cover goalsetting, planning and daily organisation, which are probably the principal ingredients of effectiveness. Compared with Wessman's factors this factor 2 is eclectic, containing one item each from factor I negative (adaptive flexibility and relaxed mastery), factor II positive (continuity and steady purpose) and factor III positive (efficient scheduling). In the pilot test, although half the sample showed the large differences between scores on factors 1 and 2 which might be expected, the three persons scoring highest on factor 1 also scored highly on factor 2. This suggests that it is possible

to be highly motivated to satisfy job demands even with a feeling of frustration over environmental issues.

Factor 3 : 'inconsistency'. This factor corresponds exactly with Wessman's factor IV positive (inconsistency and changeability).

Factor 4 : 'personal harassment'. This factor corresponds exactly with Wessman's factor I positive (harassed lack of control) and, although it does not include some of the Wessman items which most clearly express lack of control, it echoes the harassment aspect.

Factor 5 : 'relaxed style'. Another eclectic factor, this includes one item from Wessman's factor I negative (adaptive flexibility and relaxed mastery) and two from factor III negative (procrastination and inefficiency). In the pilot test half the sample scored similarly on factors 4 and 5, although these tended to be low rather than high scores. This may reflect the job-imposed nature of harassment as compared with a personally preferred style of operation, which is consistent with the two factors being independent.

The symmetry of four bipolar factors, an attractive feature of Wessman's analysis, does not fit the present data, although the present structure allows for similarly opposing attitudes

to be recorded.

Of the five factors identified, three are equivalent to Wessman's structure. These (1, 3 and 4) represent respectively general feelings, a behavioural tendency and job demands. The fact that each concerns what might be described as the 'unfavourable' pole may reflect managers' anxiety about time. The two other factors refer to typical behaviour. Factor 5 appears to be a personality characteristic and factor 2 expresses the essence of managerial effectiveness.

This factor structure can be seen to relate to the previously described influences on a manager's behaviour. Factor 1, philosophy of life, reflects an attitudinal response to what Mintzberg called environmental influences. Factor 3, inconsistency, with its implication of response to change of some sort, similarly reflects situational influences. Factors 2 and 4 can be thought of as respectively a conscious and an unconscious reaction to job influences. Factor 5 contains items which seem independent of outside influences and can therefore be thought of as manifesting a personality variable. Thus this simple factor structure can claim to reflect in the matter of time experience the principal influences on managerial behaviour.

Although in this study there have been no relationship studies

with personality factors, as was the case in Wessman's study, the establishment of such relationships seems feasible from the content of the factors.

5.4 A NEW TIME QUESTIONNAIRE

The discussion above describes what can now be termed the new 'Time Questionnaire'. The fifteen selected items were listed in random order and the questionnaire which resulted is shown as Appendix 5.5. It will be noted that the statistical background of the factorisation has been the forty-item set which first gave rise to a five-factor structure. Before the correct weights could be attributed to each retained item it was necessary to remove the influence of the items which were rejected.

Over a period of two years the new Time Questionnaire (TQ) was completed by a total of 442 subjects chosen, as before, from the population of predominantly young managers attending courses at Leicester Polytechnic. As before, these managers worked for a variety of employers in local government and the water industry, the health service, and industry and commerce. The range of educational programmes they attended extended from one-day seminars or workshops, through short full-time courses lasting up to two weeks, up to part-time qualification programmes leading to a diploma or master's degree. The

breakdown of respondents is shown in Table 5.8.

TABLE 5.8

EMPLOYMENT OF RESPONDENTS TO TIME QUESTIONNAIRE

<u>Employer</u>	<u>number</u>	<u>percent</u>
Local government & water service	253	57
Health service	87	20
Industry and commerce	40	9
Part-time master's degree	48	11
University (academic and academic-related staff)	14	3
Totals	<u>442</u>	<u>100</u>

The completed TQs became data for this study, but from the point of view of the managers who completed them the TQs were the subject of discussion concerning attitudes towards time. To facilitate this, factor score coefficients as calculated from the first 339 subjects were loaded into a spreadsheet programme on a micro-computer so that a quick report could be given to the students concerned. This was given in the form, shown as Appendix 5.6, of an interpretation and score summary. The range figures quoted on the score summary were calculated as $\bar{x} \pm \sigma$, covering 68% of cases, assuming a normal distribution. With the likelihood of 16% of results on each factor lying above, and 16% below the range, there was a number of students in each group reporting high or low results which could be used as the basis for group discussion.

The 442 questionnaires were factor-analysed and the first five factors accounted for 57% of the variance, as shown in Table 5.9.

TABLE 5.9

SUMMARY OF THE FIFTEEN-ITEM FIVE-FACTOR ANALYSIS

<u>Factor</u>	<u>Eigenvalue</u>	<u>Percentage of variance</u>
P	2.9	19.4
Q	1.7	11.2
R	1.4	9.6
S	1.3	8.6
T	1.2	8.0

The percentage of variance reported here is deceptively similar to the summary of the forty-item analysis shown in Table 5.6. For, although the figures are very similar, the factors themselves have changed position: factors 1 and 2 have become factors Q and P respectively and factors 3 and 4 have become factors S and R respectively. This change may be due in part to the improved ratio of number of cases per item (increased from 182:40 to 442:15) and in part to the disappearance of a number of items. This in turn will have affected the results statistically and it may be thought that individual respondents, in considering a smaller number of questions altogether, may give different subconscious weighting to the questions answered.

Another difference can be seen from the list of loadings on each factor as shown in Table 5.10. This is that the items within each factor have changed places in three of the five factors compared with their loadings in the forty-item matrix shown in Appendix 5.4. It is thought that these changes are due to the same influences as are described above. Although these influences could have had a profound effect on the final loadings, the effect actually exerted seems to have been rather one of detail. Exploring this detail, however, may help us to interpret the factors.

TABLE 5.10

TIME QUESTIONNAIRE FACTOR LOADINGS

<u>Item</u>	Loadings on factors				
	P	Q	R	S	T
(Decimal points omitted)					
<u>Factor P - Being organised</u>					
10.(59) to think out and plan the most efficient way to use my time	<u>79</u>	-09	-08	08	-06
7. (29) to organise my daily activites so that there is little confusion	<u>75</u>	-15	-14	01	-08
14. (2) to proceed in an orderly way toward goals set long in advance	<u>62</u>	-11	-16	-10	13
<u>Factor Q - Present-rootedness</u>					
4. (62) to think of the future as empty, hollow and dark	-02	<u>84</u>	10	13	07
8. (54) to feel that life has no rhyme or reason	-16	<u>64</u>	01	07	-00
3. (6) to feel as though I am stuck in a rut and unable to get out of it	-15	<u>59</u>	13	05	01
<u>Factor R - Personal harassment</u>					
6. (17) to experience pressure to speed up, and have to do things faster than I am able	-09	06	<u>79</u>	15	01
5. (9) to feel that I have insufficient time to accomplish everything that I must do	-10	02	<u>52</u>	01	02
9. (33) to think that I am able to work faster than I really can	-11	15	<u>36</u>	05	-11

TABLE 5.10 (contd)

<u>Item</u>	Loadings on factors				
	P	Q	R	S	T
(Decimal points omitted)					
<u>Factor S - Changeability</u>					
15.(52) to find that I have acted in a way that surprised both myself and others	-01	07	07	<u>48</u>	16
2. (36) to find that my ideas and feelings have altered greatly	06	02	03	<u>41</u>	01
11.(60) to make changes for the sake of finding something new and different	-14	09	07	<u>29</u>	-14
<u>Factor T - Relaxed Style</u>					
1. (39) to take my time in everything I do	07	10	08	-10	<u>43</u>
13.(27) to overestimate the amount of time that I need to do my work	-03	15	-11	18	<u>32</u>
12.(37) to put aside my work and relax when I feel like it	-05	-12	-06	06	<u>28</u>

The items numbers from the original TEQ are shown in brackets.

Considering the loadings as evidence of weighting, some of the items appear to have gained in significance. One item is now loaded 0.80 or above, with a further three 0.70 or above, compared with an original loading of 0.70 appearing only once. At the other extreme, there are now four items loading less than 0.40, compared with only one previously. However applying the criterion of factorial independence mentioned in Section 5.3.1, no item loads more than 0.20 on a secondary factor.

Looking at the new structure more broadly, it now appears that that factor designated 'being organised' is now regarded clearly as the major factor in attitude to time. This represents a return to the position taken at the first factorisation of the eighty-item questionnaire; it was the use of the first forty items only which reduced this factor to the second place. Factor Q, now in second place, is now designated 'present-rootedness', reflecting the feeling of being locked in the present. Factor R, 'personal harassment' is the only factor to retain its three items in the same order but the item 'to think that I am able to work faster than I really can' has decreased its loading from 0.54 to 0.36. Factor S, now designated 'changeability', appears now quite weak, with two items loading 0.32 and 0.28, and accounting for only 9.3% of the variability, compared with 15.4% previously. In Factor T the most striking change is in the item 'to put

aside my work and relax when I feel like it', down from 0.51 to 0.28. One might speculate that the pressures on managers in the public sector, the majority of the sample, have increased in the three years between the two analyses.

It should be stressed that the loading criteria were intended to apply to the selection of items for the interpretation of factors. In the present analysis, as the items have already been selected, the value of the factor matrix lies in indicating the weight attached to each item.

Scoring of questionnaires. The analysis described in this section provides for weighted scores on each factor. The weighting takes account of two aspects: the weight attached to each item's contribution to the factor; and the differing mean scores attached to each item. This second aspect is made clear by inspection of Table 5.11, which shows the mean and standard deviation of responses to each question in the TQ. The conversion table shown in Appendix 5.7 can be used to convert raw scores from the TQ into normalised scores. Scores on each of the five factors can then be obtained by using the factor score coefficients given in Appendix 5.8. This ensures that the contribution of the response to each question is taken into account in the computation of scores on each factor.

TABLE 5.11

MEAN AND STANDARD DEVIATION OF EACH ITEM IN THE TO

<u>Item No.</u>	<u>Mean</u>	<u>Std.Dev.</u>
1	3.69	1.56
2	4.19	1.41
3	3.08	1.84
4	1.91	1.36
5	4.77	1.68
6	4.11	1.60
7	4.91	1.56
8	2.01	1.28
9	3.95	1.65
10	4.68	1.60
11	3.21	1.68
12	3.92	1.80
13	2.90	1.43
14	4.48	1.61
15	3.66	1.47

Note: These figures are derived after re-numbering columns from 1 to 7 rather than from -3 to +3.

5.5 THREE CHARACTERISTIC ATTITUDES

The factors which have been derived from the analysis described above define five different characteristics which are statistically independent and which are possessed by every individual to greater or lesser degree. It is possible that individuals possess these characteristics in completely random fashion, so that no patterns would emerge if the factor scores of individuals were plotted in five-dimensional space. If characteristic attitudes do exist, however, a pattern would be apparent. This can be formalised by stating as a null hypothesis:

Hypothesis. If factor scores of individuals are plotted in five-dimensional space, no pattern will emerge which cannot be explained by purely random argument.

In order to test this hypothesis, a pilot test was carried out on 182 cases to determine whether, and if so in what manner, the cases might cluster. At that time one possible solution was the existence of five clusters of cases but it was found that two of these consisted of so few cases that their identity would have been difficult to describe adequately. An alternative solution with three clusters gave a more satisfactory disposition of the cases.

Accordingly when a cluster analysis was carried out on the

full 442 cases, it was decided to investigate a three-cluster solution. The package used for the analysis was the SPSS Quick Cluster Option which operates in the following way: starting from three arbitrary centres of the three clusters, as each new case is introduced it is allocated to the nearest cluster and its centre is re-calculated; this process continues until all cases have been allocated. Distance is defined in five-dimensional space, defining the five factors, as the Euclidean distance, or root-mean-square.

The analysis showed that there were two substantial clusters, comprising 52% and 41% of the cases, leaving a minority cluster comprising 7%. Whether or not to include a small cluster numbering only thirty cases in interpretation was debatable but the characteristics of this minority seemed sufficiently distinct for it to be retained. The centres of the three clusters are shown in Table 5.12 and again in graphical form in Figure 5.2. It is clear from inspection of these results that a purely random explanation would ignore recognisable differences between the three clusters and thus the hypothesis must be rejected. It must be appreciated that there is considerable overlap between clusters but, as in any typology, it is instructive to describe the characteristics of those cases which fall near to the centre of each cluster.

TABLE 5.12

FACTOR SCORES OF THE CENTRES OF THE THREE CLUSTERS

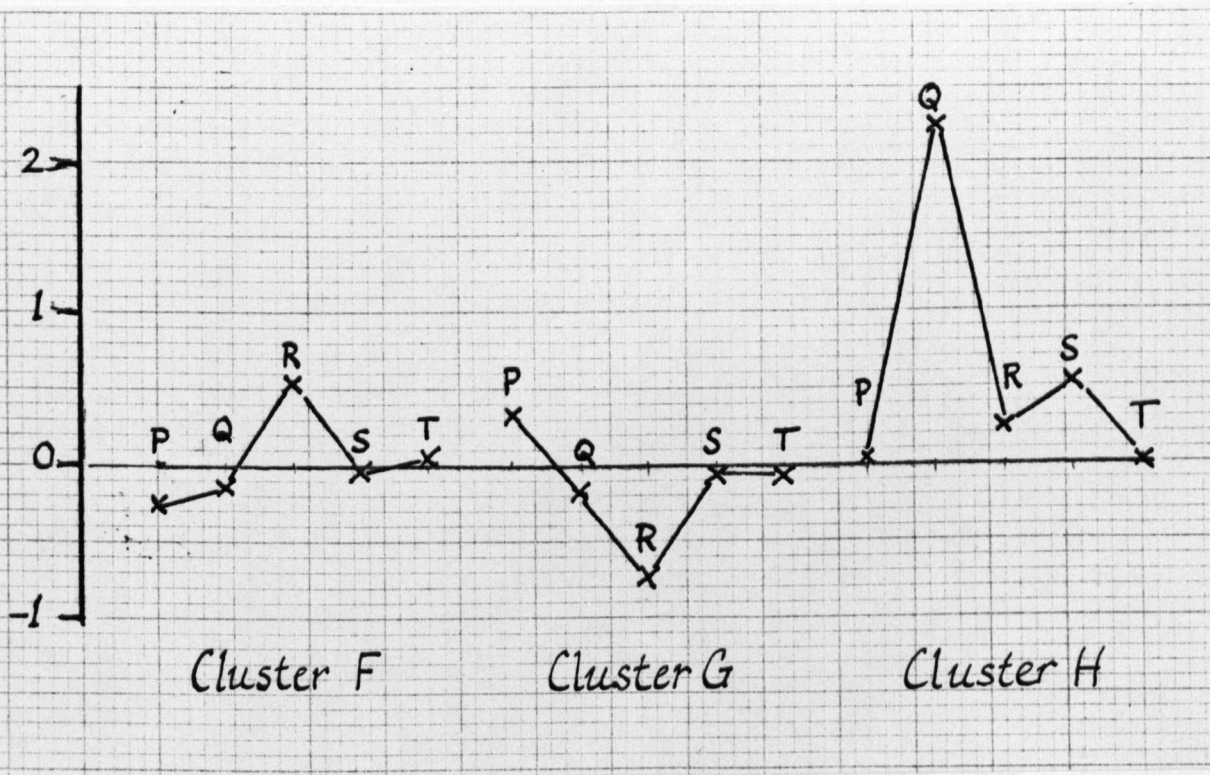
Factor		Total 442	Cluster F 232 (52%)	Cluster G 180 (41%)	Cluster H 30 (7%)
P	mean	-0	-.27	.34	.05
	std.dev.	.88			
Q	mean	-0	-.14	-.19	2.25
	std.dev.	.90			
R	mean	-0	.52	-.71	.25
	std.dev.	.82			
S	mean	-0	-.02	-.06	.51
	std.dev.	.62			
T	mean	0	.06	-.08	.01
	std.dev.	.61			

Note: A case is allocated to a particular cluster if its factor scores, as co-ordinates, place it nearest to the centre of that cluster, distance being the 'Five-dimensional hypotenuse', or root-mean square.

$$\sqrt{p^2 + q^2 + r^2 + s^2 + t^2}$$

FIGURE 5.2

FACTOR SCORES OF THE THREE CLUSTERS



Cluster F, representing 52% of the total, is distinguished by a below-average score on factor P, indicating a degree of being disorganised, together with a slightly lower than average score on factor Q, suggesting a reasonable degree of hope for the future. A higher than average score on factor R indicates a feeling of harassment, which suggests that members of this cluster might be termed 'harassed optimists'.

Cluster G, representing 41% of the total, is characterised by an above-average score on factor P, indicating a reasonably high degree of being organised, and a slightly lower than average score on factor Q, suggesting again a reasonable degree of hope for the future. A distinctive feature of this cluster is the low score on factor R, denoting a lack of harassment, which might indicate as a suitable name for members of this cluster 'contented planners'.

Cluster H, although representing only 7% of the total, has possibly the most distinctive profile. Its most outstanding feature is a very high score on factor Q, suggesting an almost hopeless view of the future. This is combined with an above average score on factor R, indicating harassment, and also an above average score on factor S, suggesting changeability. Members of this cluster are probably best identified by their principal characteristic, 'fatalists'.

These word pictures of members of the three clusters are based purely on a statistical invention and the descriptions can be nothing more than speculation. Reference to the clusters will be made again in Chapter 7 when an attempt to relate the content of interviews to the statistical analyses will be made.

Discussion. In this chapter it was shown that the four-factor classification of the subjective experience of time as described by Wessman was not found to apply to the present sample of managers. A simplified questionnaire based on Wessman's yielded results which could be explained by a five-factor solution, the factors having some aspects in common with Wessman's factors but differing in material degree.

The cluster analysis described in the present section has shown that it is possible to classify subjects into three groups with characteristic differences in their scores on the five factors. Although the factors themselves were statistically independent as derived their influence in distinguishing cluster types appeared to be a joint one. In particular, factors P and R together distinguish between harassed optimists and contented planners. Factors Q and S distinguish the minority group of fatalists. It is contended that the cluster analysis lends support to the definition of the factors, at least in respect of the first four factors. It will be remembered that in the discussion in Section 5.3.3

factor T was described as 'unsafe' and its weak identity was questioned. On the evidence of the cluster analysis, a four-factor solution might be preferred but the retention of the fifth factor will be discussed again in Chapter 7 in the light of interview information.

The evidence presented in this chapter confirms that attitude to time is a multidimensional construct and suggests that the factors derived in this study are more appropriate to British managers than those derived by Wessman for American students. This seems to be the first British study in which attitude to time among managers has been explored. It is hoped that this work may stimulate further research in the area so that the dimensions identified here may be more widely verified.

CHAPTER SIX

LOCUS OF CONTROL

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6.1 INTRODUCTION

In detailing his proposals for a scale based on internal-external locus of control, Rotter (1966) stated that the twenty-three-item scale was unidimensional. The weight of empirical evidence since his data were published suggests otherwise. This evidence was reviewed in Section 3.5.

Most of the studies using the Rotter I-E scale, however, have been conducted with students as subjects and there is scope for the scale to be applied to a wider sample of adults. It is the purpose of this chapter to describe the results of administering the scale to 662 managers who have been engaged in post-experience management development activity with Leicester Polytechnic. Some of these managers were enrolled on part-time courses leading to a master's degree or post-graduate diploma in management; most were participating in a short full-time course of up to three weeks in duration or a specialised seminar or workshop of one or two days' duration. The total age span of the managers involved was wide, the majority being in the range of twenty-five to forty years. Almost all of the participants were in a position of responsibility, often recently gained, with good prospects of promotion in their organisations. These organisations were for the most part in the public sector, more than half in local government and a substantial number in the National

Health Service. The remainder were drawn from industry, commerce and a university. A breakdown of the numbers is shown in Table 6.1.

<u>TABLE 6.1</u>		
<u>SUMMARY OF EMPLOYMENT OF SUBJECTS COMPLETING THE QUESTIONNAIRE</u>		
Employment	No. of subjects	Percent
Local government	379	57
Health Service	196	30
Mixed	87	13
Total	<u>622</u>	<u>100</u>

The scores obtained by these subjects were factor analysed with the result that a two-factor structure was established as the most satisfactory representation of the data. The new factor study and the comparisons with published studies will be described in the following sections. A method of scoring is introduced based on differential item weightings; it is contended that this method allows for better discrimination between subject scores than the simple additive method.

6.2 A NEW FACTOR STUDY

6.2.1 Overview

In Section 3.5 several factor studies were reported and discussed, all of them finding that a multifactorial view of the I-E scale provided a more satisfying interpretation of results than the unifactorial view espoused by Rotter.

The weight of opinion in the studies discussed seemed to favour a two-factor solution, although the Marsh and Richards (1987) study provided a persuasive argument in favour of four or five factors. In fact, quite early in the present research programme, when a reasonable number of responses had become available, a preliminary analysis was carried out which suggested that at least two factors would be found. At that time the present writer was speculating on the structure which might emerge from the analysis and looked for clusters of ideas, partly from careful consideration of the items in the I-E scale itself, and partly from the factors which had been identified by the earlier writers.

Marsh and Richards started their investigation, it will be remembered, by proposing an a priori structure, which had the merit of ensuring that their solutions were well based in theory. The Marsh and Richards study had not yet been

published but the cluster names used by Paulhus and Christie (1981) for their model shown in Figure 3.1 (Section 3.5.5) were helpful. Many of the items clustered around words like 'chances', 'luck' and 'fate'; there was a group of items which were socio-political; there were others which had to do with interpersonal relations and yet others which related to career progress and achievement.

A similar discussion to the present one was given in Section 3.5.5 when common threads connecting several of the studies were considered. It can be argued that one of the reasons why there has been little agreement between investigators in nomenclature is that the linkages between items themselves form a complex pattern. Some items pair easily with others, such as the external forms of items 6 and 16:

- without the right breaks one cannot be an effective leader (item 6);
- who gets to be the boss often depends on who was lucky enough to be in the right place first (item 16).

On the other hand a complex statement like that in item 5:

- most students don't realise the extent to which their grades are influenced by accidental happenings

involves awareness ('don't realise'), achievement ('grades') and chance ('accidental happenings'). The alternative statement:

- the idea that teachers are unfair to students is nonsense - adds the concept of fairness, so this item has four linkage possibilities. This particular item is a good example of Collins's (1974) contention that the alternatives in the scale are not necessarily opposite in meaning.

In general it would appear that individuals completing the questionnaire make a range of subjective decisions involving selecting what appears to be the salient idea expressed by a complex statement. Perceptions of what idea is salient will differ between subjects and therefore their interpretation of the whole scale is likely to be intensely personal. This is not to argue that the a priori modelling approach of Marsh and Richards is not sound; it does suggest that for the present investigator to impress his own subjective perceptions on the scale and then to use this as a basis for investigating other people's perceptions would not have been a safe procedure.

The argument just advanced was persuasive enough to dictate the sequence of stages in this strand of the research: first there must be a statistical assessment of the responses and this should then be subjected to the investigator's personal judgment. This is also the sequence of this section, in which the stage of factor analysis precedes that of interpretation, including comparison with other studies.

6.2.2 First Factorisation

In the first factorisation, seven factors were found with eigenvalues greater than 1.0, corresponding in total to 50% of the variance. Accordingly seven factors were extracted and the rotated structure was examined, with the following results.

The criterion for inclusion in the structure for interpretation was a loading of 0.4, with no loading on another factor exceeding 0.2. Eighteen items had sufficient loading but six of these loaded also on another factor, as can be seen from Table 6.2

Inspection of Table 6.2 leads to the conclusion that a seven-factor solution is not appropriate, particularly as the number of items loading on the last three factors is, respectively, one, one and two. Three of these four items also load on a second and preceding factor. However, factor 1 emerges as a clear-cut socio-political factor, agreeing with the majority of the studies examined in Section 3.5.5; the secondary loading of item 3 on factor 6 is unimportant but the secondary loading of item 12 on factor 2 would need to be considered. Factor 2 has four items referring to achievement;

TABLE 6.2

ITEMS LOADING ON A SEVEN-FACTOR STRUCTURE

Rotter
Item No.

Factor	1	2	3	4	5	6	7
2			x				
3	x					o	
4							
5							
6							
7				x			
9		o				o	x
10					x		
11		x	o				
12	x	o					
13		x					
15		x					
16		x					
17	x						
18							
20				x			
21			x				
22	x						
23					o		x
25		o	o			x	
26				x			
28							
29	x						
% of total variance	16.3	8.4	5.9	5.3	4.9	4.8	4.4

Items loading ≥ 0.4 are marked xItems loading ≥ 0.2 on a second factor are marked o

the secondary loadings of items 9 and 25 are not inconsistent with this focus but that on item 12 appears to be a contaminating item. The two items in factor 3 are loosely associated with misfortune, but the secondary items refer to luck in general. Factor 4 contain three unambiguous items all referring to interpersonal relations and is probably the clearest factor after factor 1.

In summary, although a seven-factor solution does not seem tenable, there are clear themes of achievement and interpersonal relations in the lower factors to add to the first factor of socio-political items. If the same data were analysed again with fewer factors, the secondary loadings on factor 2 would probably become more prominent; although factor 4 has a clear focus, factor 3 appears unsatisfactory. These arguments, together with the fact that 24.7% of the variance is explained by the first two factors, lead to a two-factor structure as probably the most appropriate.

6.2.3 Second Factorisation

For the second factorisation two factors were extracted, the items loading most highly on the two factors being shown in Table 6.3.

TABLE 6.3

ITEMS LOADING ON A TWO-FACTOR STRUCTURE

Rotter Item No.	Factor	1	2
2		(x)	
3			x
4			
5			
6		(x)	
7			
9		x	
10			
11		x	o
12			x
13		(x)	
15		x	
16		(x)	
17			x
18		x	
20			
21		(x)	
22			x
23		(x)	
25		x	
26			
28		x	
29			x

Items loading ≥ 0.4 are marked x

Items loading ≥ 0.3 are marked (x)

Items loading ≥ 0.2 on a second factor are marked o

It was found that six items on factor 1 and five items on factor 2 loaded at least 0.4 on that factor, with loadings not exceeding 0.2 on the other factor (with the exception of item 11 which loaded 0.22 on factor 2). In the case of factor 2 there was a sharp cut-off point at 0.41, the next highest-loaded item being item 11 with a loading of 0.22. In the case of factor 1, however, increments were much more gradual. In Table 6.3 six further items loading above 0.3 are shown, the meanings of which are very similar to those of the six items loading above 0.4 (1). To emphasise the gradual nature of the increments, a further six items loaded above 0.2 and only three items loaded less than 0.1. The complete factor matrix is shown in Appendix 6.1.

Table 6.3 is the same form as the published two-factor solutions, which were shown in Table 3.1 in Section 3.5.2. To make comparison easier the two tables are combined in Table 6.4. Of the twelve items appearing in the new factor 1 nine can be found in the equivalent factor of at least three of the

Note 1

In view of the relatively large number of subjects ($n=622$) consideration of loadings above 0.3 seems reasonable; see Comrey (1973) and the discussion on this point in Section 5.3.1.

TABLE 6.4

COMPARISON OF THE NEW FACTOR STRUCTURE WITH PUBLISHED STUDIES

Items used for interpretation are marked x.

Rotter Item No./ Factor (1)	Mirels students n=316		Cherlin students n=161		Cherlin residents n=100		O'Brien random n=1921		Parkes students n=406		This study managers n=622	
	GC	PC	GC	PC	GC	PC	GC	PC	CPL	CSL	GL	PC
2			x						x		x	
3				x		x		x		x		x
4			x						x			
5	x						x		x			
6			x		x						x	
7				x								
9				x2		x			x		x	
10	x		x		x		x		x			
11	x		x		x		x		x		x2	
12		x		x		x		x		x		x
13			x2			x	x				x	
15	x		x				x		x		x	
16	x		x						x		x	
17		x		x		x		x		x		x
18	x		x		x				x		x	
20			x									
21					x						x	
22		x		x		x		x		x		x
23	x		x						x		x	
25	x		x		x				x		x	
26												
28	x		x				x				x	
29		x		x		x		x		x		x

TABLE 6.4 (contd.)

Notes: 1. Factor names are:

GC	general control
PC	political control
CPL	control at personal level
CSL	control at socio-political level
GL	Good luck

2. High loading also on other factor

published studies, the exceptions being items 2, 6 and 21 which agree with one or two published studies. The new factor 2 shows almost perfect agreement with published studies, the only exception being the Mirels study which did not include item 3.

Another comparison which can be drawn is between the new two-factor structure and the seven-factor structure shown in Table 6.2. Of the twelve items in the new factor 1, six appeared in factor 2 of the seven-factor solution. Items 2 and 21 were the two items comprising factor 3 and item 23 was from factors 5 and 7. The remaining three items were distributed between three factors in the seven-factor solution:

- item 6 was loaded above 0.2 on factors 2, 4 and 5;
- item 18 was loaded above 0.2 on factors 2, 3 and 5;
- item 28 was loaded above 0.2 on factors 2, 5 and 6.

These three items constituted an argument for simplifying the factor structure from seven to two factors; in the original structure no meaning could be extracted from any of these items because their contribution was distributed whereas they can all contribute their meaning to the new factor 1. The meanings of the new factors will now be discussed in detail.

Factor 1. In Table 6.5 the twelve items loading above 0.3 are shown, together with the external statement and the loading of each item. The table also shows the factor to which each item was attached in Marsh and Richards's (1987) four-factor solution, which was shown in Table 3.2, Section 3.5.3. It can be seen that the new factor is a composite of Marsh and Richards's 'general luck' and 'success via personal initiative' factors. As the four-factor solution draws a distinction between these two factors it may seem unlikely that the two factors could be combined, but the distinction needs to be challenged.

Among the 'general luck' items only two, items 2 and 16, contain the words 'luck' or 'lucky' in the external form quoted. Three other items, however, contain the words in the internal form, in the sense of 'denial of luck'. The sixth item in this group, item 21, balances the good and the bad which could fairly be described as chance.

The 'success via personal initiative' group seems less promising as only items 13 (good fortune) and 6 (right breaks) fit the group of general luck items. However item 9 refers to fate in the internal form and item 11 (right place at the right time) not only implies 'lucky right place' but reflects item 16, where 'lucky' and 'right place' appear together. The remaining two items are open to more than one interpretation. Does 'can't understand how' in item 23 imply a complexity that lies beyond comprehension, a grievance against teachers or a presumption that fate or chance has taken command?

In the response 'I don't have enough control' (item 28), does control lie in circumstances which could be interpreted as fate, or is it in the hands of 'powerful others' (Rotter, 1966 and Levenson, 1974) - person or persons unknown? It should be noted that item 23 is the only one of the three 'academic situation' items to be included in the new structure.

TABLE 6.5

ITEMS USED FOR INTERPRETING FACTOR 1

Rotter Item No.	M & R Ref. (1)	Description of 'external' choice	Loading
25	GL	Many times I feel that I have little influence over the things that happen to me	0.58
11	SPI	Getting a good job depends mainly on being at the right place at the right time	0.48 (2)
18	GL	Most people don't realise the extent to which their lives are controlled by accidental happenings	0.46
15	GL	Many times we might as well decide what to do by flipping a coin	0.46
28	SPI	Sometimes I feel that I don't have enough control over the direction my life is taking	0.46
9	SPI	I have often found that what is going to happen will happen	0.41
16	GL	Who gets to be boss often depends on who was lucky enough to be in the right place first	0.38
6	SPI	Without the right breaks one cannot be an effective leader	0.37
23	SPI (AS)	Sometimes I can't understand how teachers arrive at the grades they give	0.35
13	SPI	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow	0.34
2	GL	Many of the unhappy things in people's lives are partly due to bad luck	0.34
21	GL	In the long run the bad things that happen to us are balanced by the good ones	0.32

TABLE 6.5 (contd.)

Note 1. M & R Ref is a reference to the factor to which the item was allocated by Marsh and Richards (1987) and shown in Table 3.2 in Section 3.5.5:

GL	general luck
SPI	success via personal initiative
AS	academic situation

Note 2. Item 11 loaded 0.22 on factor 2.

Summarising, the factor contains ten items which all bear reasonably clearly on issues of luck or chance, which suggests that the name 'general luck' is a better name than 'general control' preferred by the earlier investigators. The implication of doubt in the meaning of the remaining two items justifies their inclusion.

Factor 2. This is an unusually consistent factor which was recognised by all the investigators who used a two-factor solution, and also by Collins (1974), Duffy et al. (1977) and Marsh and Richards (1987). The comparison in Table 6.4 makes this very clear. Table 6.6 shows the external form of the five items, together with their loading.

TABLE 6.6

ITEMS USED FOR INTERPRETING FACTOR 2

Rotter Item No.	Description of 'external' choice	Loading
17	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control	0.64
22	It is difficult for people to have much control over the things politicians do in office	0.62
12	This world is run by the few people in power, and there is not much the little guy can do about it.	0.56
3	There will always be wars, no matter how hard people try to prevent them	0.45
29	Most of the time I can't understand why politicians behave the way they do.	0.41

The external form of items 22 and 29 mentions 'politicians', while the internal form of items 3 and 17 mentions 'politics' and 'political and social affairs'. Item 12, the only item not to use a word related to politics, refers to 'government' in its internal form. An indication of the strength of this factor is the fact shown in Table 6.2, that these five items constituted factor 1 in the seven-factor solution, with a variance of 16.3%. Naming the factor 'political control' seems indicated by the content and by the number of investigators who have favoured that name.

In summary, the solution with two factors ('general luck' and 'political control') just described seems to be a satisfactory form of analysis of the responses from the 662 managers who completed the questionnaire.

6.2.4 Accuracy of Interpretation

Much of the debate about different solutions to the question of multidimensionality has hinged on different interpretations by respective investigators. One curious phenomenon little remarked by those who have given names to the factors they have found in their studies is the very nature of those names. For example, factor names in studies examined in previous sections include 'personal control', 'general control' and 'success via personal initiative' - names derived from the internal form of the items which constitute them. Yet scoring as recommended by Rotter (1966) is in the external direction and this is followed by most investigators. Could it be that writers are subconsciously revealing their aspirations to encourage people to become more internal? This is certainly the viewpoint of the present writer, speaking as a tutor; as a researcher, one might be more consistent by giving a factor name which reflects a high score on that factor. (The naming of factor 2 of the new factor study described in Section 6.2.3 does not contradict this viewpoint; a high score on that factor indicates a belief

that control lies with politicians, so that 'political control' is an appropriate name).

A more important aspect of interpretation is the way the subjects themselves interpret the questions on the scale. One can assume that researchers read both alternatives thoroughly before deciding the meaning of the item; are subjects as thorough before deciding their response? Researchers can place each item in the context of the whole scale when considering its contribution to the whole; subjects respond to each question in the context only of the questions they have already answered. The significance of this is that the order in which questions are placed in a questionnaire is recognised as an important matter for design of questionnaires. Another problem of questionnaire design is the wording used to couch the question. Oppenheim (1966) lists several reasons why a question may be misinterpreted:

it may be too vague in content or ask for information which the respondent does not have; it may be a leading question, which biases the answers . . . [it] may be too wide or narrow in scope (p.28)

Yet, in reporting on the development of the I-E scale Rotter made no mention of this aspect of questionnaire design, concentrating on the statistical criteria for validity. Similarly those who have developed reduced or extended scales (such as Gurin et al., 1969 or Levenson, 1974) make no

specific mention of pilot testing to ensure that semantic issues do not adversely affect the quality of subject responses.

It may well be that the investigators referred to have automatically attended to these issues and have not thought it necessary to mention the fact in the summary of their work. It is raised here as an issue to emphasise that any completed questionnaire may well have one or more responses that do not accurately reflect the subject's attitude or belief. The present writer has many times been asked, 'What do you do if you don't agree with either?' Doubt about one or two questions out of twenty-three can raise a doubt about discrimination, which will be discussed in Section 6.3.

6.3 DISCUSSION

6.3.1 Comparison of Norms

In his original monograph Rotter (1966) quoted results of a number of applications of the I-E scale, some by himself and some by others, stating the mean for each study. Judging from the figures he quoted, a sample from a normal population would expect to yield a mean tending towards the internal pole of the scale; numerically this would be less than 11.5. Spillane (1980) followed up a lead which suggested that the norms which

could be expected from Australian populations were higher than those quoted by Rotter. He quoted results of comparative figures he himself had obtained in Australia and in America which showed that the Australian samples were significantly more external than the American. One reason why Australians might appear to be more external on the locus of control scale than Americans could be the 'pervasive influences of a Protestant Ethic ideology' in America (p.498). O'Brien and Kabanoff (1981) published a range of study norms, some taken from Australian sources and some from other countries. The mean and standard deviation of the present data, calculated in the additive fashion used by Rotter, are shown in Table 6.7 alongside those of some published studies.

The majority of the studies quoted show a mean in the region of 7 - 10, although a few fall outside this range. It may be relevant that the two very low figures (for Rotter and for O'Brien and Kabanoff) were obtained with relatively small sample sizes. From this comparison it would seem that the present study has yielded results which differ very little from the general trend.

TABLE 6.7

COMPARISON OF NORMS FROM VARIOUS STUDIES

Source	Sample size	Mean	Std. Dev.
Rotter (1966) - 9 studies ranging from to	33 32	5.48 10.00	2.78 4.20
Gozali et al. (1973)	63	9.8	4.56
Spillane (1980) - industry studies ranging from to	133 169	7.6 10.0	4.8 3.8
O'Brien and Kabanoff (1981) - 8 Australian studies from to	46 63	7.67 12.67	3.82 4.52
10 non-Australian studies from to	27 343	5.41 12.07 (1)	3.15 3.96
Parkes (1985)	406	12.26	3.57
This study	662	10.10	4.15

Note : (1) Hong Kong students

6.3.2 Sub-Samples of This Study

From the experience of the present writer, both in connection with this research and in his other capacity as tutor, senior managers are, in local government, very conscious of being influenced by political issues. When the factor study showed that political control was a clear factor in interpreting the present data, there arose the possibility that there might be

a higher (more external) score on factor 2 for local government managers than for those working outside local government. Formally stated as a null hypothesis, this becomes:

Hypothesis - That there is no significant difference between the mean factor scores obtained by local government managers and those obtained by non-local government managers.

Results obtained are shown in Table 6.8.

TABLE 6.8

FACTOR SCORES FOR SUB-SAMPLES OF THE POPULATION

Sub-Sample	n	Factor 1 General Luck mean (s.d)	Factor 2 Political Control mean (s.d.)
Local Gov't	379	-0.007 (0.850)	0.027 (0.852)
Non-Local Gov't	283	0.006 (0.871)	-0.022 (0.817)

For factor 1 $t (df = 660) = 0.19 (p = 0.848)$

For factor 2 $t (df = 660) = -0.75 (p = 0.455)$

The null hypothesis cannot be rejected, which means that the suggested higher (more external) score on factor 2 for local government managers has not been established. The high values of probability, with a very small difference between means and with large numbers in both samples, indicate that further

research would not be useful. If nothing more comes from this test, at least it does show that industry differences as an influence on belief about internal-external locus of control are not significant. This supports the general contention throughout this thesis that attitudes are governed more by person variables than by job, industry or situational variables.

6.3.3 Approaches to Discrimination

Since the concept of locus of control has become so widely used, the typical characteristics of internals and externals have been described in ever more detail by establishing relationships between scores on the I-E scale or its derivatives and scores on other measures. Probably because of its established status as a variable, locus of control is usually taken to be the independent variable with results on the dependent variable for externals and internals being compared. The implication of this type of analysis is that there are two different types of people based on their scores on the I-E scale, rather than that individuals' scores lie on a continuum. It is contended that this approach conceals many differences between individuals, for reasons which will now be elaborated.

The single factor criterion. Most of the comparative studies which have been reported follow Rotter's (1966) statement that the scale is unidimensional and additive. Investigators vary in their decision about where to draw the dividing line between internals and externals. Anderson and Schneier (1978) defined an external as a subject whose score exceeded the median figure of 7. Platt and Eisenman (1968) preferred to leave a central score unclassified and defined an internal as one with a score of 6 or under, and an external as one with a score of 9 or over. Platt and Eisenman did not elaborate their reasons for not classifying scores of 7 or 8 but the decision is consistent with the discussion in Section 6.2.4 illustrating the number of ways in which a subject may make a response which does not fully accord with his or her attitude.

Kuypers (1972) and Gozali et al. (1973) both divided their sample in three equal parts and named as externals or internals those in the highest and lowest scoring group respectively. This approach seems to acknowledge possible errors in interpretation better than either Anderson and Schneier or Platt and Eisenman and will be adopted in this discussion, there being no standardisation apparent in the literature.

Means of item scores. It is apparent from the tabulation of scores from any group of subjects that some items tend to

attract more external responses than others. To indicate the extent of this variation, the means have been calculated for each item, using the full sample of 662 subjects. The results are shown in Table 6.9 for those items which have been selected for interpretation of the two factors in the present study (see Table 6.3).

TABLE 6.9

MEANS OF ITEM SCORES

(Showing items selected for interpretation of factors)

Rotter Item No.	FACTOR 1 Mean	FACTOR 2 Mean
2	0.51	
3		0.73
6	0.24	
9	0.28	
11	0.50	
12		0.59
13	0.25	
15	0.20	
16	0.29	
17		0.76
18	0.72	
21	0.76	
22		0.57
23	0.17	
25	0.50	
28	0.26	
29		0.24

Turning first to factor 2, one can see that an external response is three times as likely on item 3 as on item 29. For intermediate items like 12 or 22, internal and external responses are equally likely. On factor 1 the contrast is even more marked. Internal and external responses are equally likely on items 2, 11 and 25 but an external response on items 18 and 21 is four times as likely as on item 23.

The point of this comparison is to emphasise that simple additive scores take no account of the likelihood that subjects will exhibit an external belief more on certain items than others. The weight of evidence from the very considerable number of studies which have been reported is that subjects with strongly external beliefs differ sharply from those with strongly internal beliefs. However, it is argued here that it is unlikely that any certainty can be attached to marginal differences in scores.

Using weighted scores. A logical development from the conclusions drawn from this chapter is that weighted factor scores should be used to discriminate between subjects. It has been shown that there is widespread agreement that a multi-factorial approach to the I-E scale gives a better statement of belief in locus of control than an unifactorial one (see particularly Section 3.5). As these factors have been derived from the differential contributions of individual

items to the central clusters of ideas which constitute the factors, it is a logical extension to weight the contribution made by those items selected for interpretation.

Using this principle, what constitutes a score on a factor is the weighted sum of the item responses, not simply the arithmetic sum. A table of factor score coefficients - the set of constants which need to be multiplied by the normalised score on each item - is shown in Appendix 6.2. This is the practice which is recommended for use by future investigators as giving a fairer picture of a subject's personal belief concerning locus of control.

As an illustration of how the weighted score principle produces a fairer statement of internal or external belief, the 662 responses obtained during this study have been scored by the simple additive method. In Table 6.10 subject scores have first been classified as low (internal), medium and high (external), following the method adopted by Kuypers (1972) and Gozali et al. (1973). The criteria for allocation to the groups have been scores of 0-8 for internals and 13-23 for externals in order to obtain the nearest to equal numbers in each group. In allocating to similar groups according to factor scores the criteria have been:

for factor 1, scores less than -0.48 for internals and
scores greater than 0.38 for externals;

for factor 2, scores less than -0.36 for internals and
scores greater than 0.52 for externals.

TABLE 6.10

COMPARISONS OF WEIGHTED FACTOR SCORES WITH ADDITIVE SCORES

Factor Scores			Additive Scores						Totals	
Factor	Criterion		low (internal) 0-8		medium 9-12		high (external) 13-23			
	1	2	1	2	1	2	1	2	1	2
low	≤ -0.48	≤ -0.36	181	143	40	56	0	22	221	221
medium	> -0.48 < 0.38	> -0.36 < 0.52	50	57	128	100	37	53	215	210
high	≥ 0.38	≥ 0.52	6	37	64	76	156	118	226	231
Total			237	237	232	232	193	193	662	662

There are a few cases in which contrary indications are given by the two methods of scoring. Internals by the additive method include six cases which should be externals on weighted factor 1 scores and thirty-seven on factor 2 scores. At the other extreme, externals by the additive method include only twenty-two cases which should be internals on weighted factor 2 scores.

More distinctive are the cases which would not be classified by the additive method but which are clearly internals or clearly externals by the weighted score method. From Table 6.10 it can be seen that on factor 1 scores forty would be internals, the figure for factor 2 being fifty-six. The corresponding figures for externals are sixty-four and seventy-six respectively.

To emphasise the extent to which additive scores can conceal distinctive beliefs, the figures have been re-worked, using as criterion the standard deviation of each factor. As the means for both factors is 0.00, this criterion means allocating to groups on the basis of ± 0.86 for factor 1 and ± 0.83 for factor 2. This allocation shows the number of extreme cases which are wrongly allocated by the additive method. Table 6.11 shows these figures.

TABLE 6.11

COMPARISON OF EXTREME CASES BY TWO SCORING METHODS

Factor scores		Additive scores					
	Criterion	low		medium		high	
	1 2	1 2	1 2	1 2	1 2	1 2	
low	≤ -0.86 ≤ -0.83	-	-	6	33	0	22
high	≥ 0.86 ≥ 0.83	0	9	17	38	-	-

The key to the interpretation of Tables 6.10 and 6.11 lies in the influence of a distinctive factor 2, which figures so prominently in Table 6.11. It is suggested that belief in political control is independent of belief in general luck; this supports the statistical evidence supplied by the factor analysis, yielding two factors which are orthogonal.

The case for a two-factor solution to the locus of control questionnaire is a strong one. Support for the present solution of factors based on general luck and political control is quite substantial from studies such as Cherlin and Bourque (1974), O'Brien and Kabanoff (1981) and Parkes (1985); the present study adds to this support. Application studies examining the relationship between locus of control and other dimensions of personality would be more meaningful if separate analyses were conducted with factor 1 and factor 2 scores. One could visualise relationships between a dimension like ego functioning (as in Kuypers, 1972) and the general luck factor alone. Dimensions which are more career-related, such as need for achievement (as in Gozali et al., 1973), however, might show interesting relationships with both factors. The argument here is that senior managers, especially but not exclusively those in the public sector, are usually aware of political influence on the choice of strategies of their organisations, and this awareness could result in individual

managers having quite definite opinions and beliefs on political and governmental matters. Lines for future research are suggested by these speculations.

6.3.4 Relationship with Time Questionnaire

The two main strands of the present research, as described in Chapters 5 and 6, have been pursued quite independently and many subjects completed only one questionnaire (see Figure 4.5). Nevertheless some aspects of the two questionnaires touch similar attitudes and the possibility of a relationship between the two instruments needs to be explored. In the Time Questionnaire, factor P (being organised) expresses similar attitudes to an internal response to factor 1 (general luck) of the I-E scale. Factor Q (present-rootedness) suggests an attitude of personal helplessness which might have a relationship with an external belief on factor 2 (political control), although there is in the time questionnaire no reference to political issues.

In order to test these speculations a Pearson correlation was carried out between each of the five factors of the Time Questionnaire and each of the two factors of the I-E scale. The formal null hypothesis could be expressed as:

Hypothesis. That there is no significant relationship between any of the five factors on the Time Questionnaire and either of the factors on the I-E scale.

In all, 265 common cases were used for the analysis, which took the form of a Pearson correlation analysis of the two factors of the I-E scale against the five factors of the TQ. The results of the analysis are shown in Table 6.12.

TABLE 6.12

PEARSON CORRELATION MATRIX : FACTORS OF I-E SCALE AGAINST FACTORS OF TIME QUESTIONNAIRE

Factors of Time Questionnaire	Factors on I-E scale:	
	1. General luck	2. Political control
P. Being organised	-.0856 p=.082	-.1178 p=.028
Q. Present-rootedness	.1270 p=.0190	.0370 p=.274
R. Personal harassment	.0894 p=.073	.0242 p=.348
S. Changeability	.0651 p=.145	.0519 p=.200
T. Relaxed style	.0629 p=.154	.1298 p=.017

With ten correlations one chance relationship could be expected to occur at the 0.10 level; in the analysis five correlations are at the 0.10 level, three of them being at the 0.05 level or better. The null hypothesis must clearly be rejected as the analysis shows several strong correlations:

- Factor P (being organised) is negatively correlated with the I-E scale, significantly with factor 2 (political control). Internals could expect to score highly on an

organisation factor, but the significant value being on political control is interesting.

- The significant correlation between factor Q (present-rootedness) and externality on the general luck factor is to be expected and corresponds with the general descriptions of both factors.
- The correlation between factor R (personal harassment) and the general luck factor is relatively weak but suggests a tendency for externals to feel harassed, a result which might have been expected.
- The fact that factor T (relaxed style) is significantly correlated with externality, but only on the political control factor, was unexpected. It seems that this results taps the 'indifference' meaning of factor T, rather than the 'mastery' alternative. One possible explanation is that, if respondents think they cannot influence socio-political issues, there is little point in worrying about it.

This selective agreement between the two scales indicates that, while there is a very clear relationship between certain factors, the scales measure different attributes. The reason why the two factors of the I-E scale show such different

results may be a suitable subject for further investigation, perhaps by a limited interview programme. In general, however, the correlation analysis lends support to the factorial representation of both scales. It also strengthens the picture of the external as being slightly disorganised and harassed, with little hope for the future.

CHAPTER SEVEN

AN INTEGRATIVE STUDY

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7.1 INTRODUCTION

7.1.1 The Need for the Study

The earlier chapters of this thesis have concentrated particularly on the first two aims of the research, as set out in Section 1.2:

- (i) to investigate ways of analysing managers' attitude to time and to establish and administer an instrument which allows individual managers' attitudes to be described quantitatively;
- (ii) to investigate different personality attributes which may influence attitude to time and to administer a selected instrument to a sample of managers.

The resulting two strands of the research have proved fruitful in the exploration of the dimensions contained within the constructs. This exploration has been at once interesting and important in identifying more clearly specific aspects of attitude and belief which relate to the way managers use their time.

In both Chapter 5 and Chapter 6 the point has been made that the results obtained were statistically determined with interpretation by the researcher kept to a minimum. As a result a degree of objectivity has been maintained, which can be claimed to have its own virtue. For the interpretation of the dimensions revealed to be fully validated, however, the

objectivity of numerical scores needs to be leavened with subjective interpretative comments from the subjects involved.

It was always the intention that the two strands should be integrated in some way and an integrative study was seen to be the most useful method of satisfying both the need for subjective comments on the scoring of responses to questionnaires and the need for integration of the two strands. The need for a specific study can be seen from a review of subjects used in developing the factor structure of the I-E scale and the Time Questionnaire. In both cases the subjects were from a variety of backgrounds. Each group of subjects shared a particular course attended and had in common similar employing organisations, or similar professions, or at least similar subject interest; however, there were only a few common threads connecting the groups with one another, which explains the variety of background.

It had already been observed that the I-E scale was situation-dependent (see discussion in Section 3.4.3). The Time Questionnaire is a new instrument and no separate tests have yet been carried out on its situation-dependence. Administering both questionnaires to managers employed by the same organisation would remove one of the uncontrolled variables in the individual studies reported in Chapter 5 and Chapter 6.

In the planning of an integrative study three objectives were formulated:

1. to determine whether the scores obtained by participants exhibited substantially the same range as those obtained by the whole sample;
2. by interviewing participants in the integrative study to gain a greater understanding of the two principal instruments and their statistically determined factor structure;
3. to explore a possible relationship between attitude to time, as described by scores on the Time Questionnaire, and temporal behaviour, as reported on the Obstacles Questionnaire, which was developed specifically for this study.

In this chapter results will be assessed in the light of these objectives.

7.1.2 Questions of Access

In Section 4.2.3 the question of building relationships

between researcher and subject was discussed. It was pointed out that when research was to be carried out in an organisation, the management of the organisation became an actor in the situation. Bogdan and Taylor (1975) recommended that a 'bargain' be struck between the actors 'that defines the obligations they have to one another' (p.35). In the case of this integrative study two questions arose in describing these obligations:

1. How does one obtain full cooperation from the subjects when they are selected by the organisation?
2. What obligations need to be specified in drawing up the bargain with the employing organisation?

Cooperation of subjects. In psychological research the usual practice is to invite undergraduate or graduate students to act as subjects, sometimes for payment but often in return for some accreditation on their course. In the present research it was possible to approximate this arrangement by building into tutorial sessions discussion on an instrument which involved only a few minutes to complete. Linking the results on the I-E scale to social learning theory and its implications, and linking results on the Time Questionnaire to time management issues, were seen by participants as a worthwhile development and thus as adequate recompense for

their contribution.

The proposal for the integrative study made altogether greater demands on the subjects. As can be seen from Appendix 7.2 the Obstacles Questionnaire demands much more time to complete than either the I-E scale or the Time Questionnaire. In addition, some participants might be invited to be interviewed, with a corresponding considerable investment of their own time for what could only be a marginal benefit to themselves. Whatever bargain was struck, the participants were bound to be net contributors; all the researcher could offer was personal advice during the interview on any time management problems, together with sight of the report prepared for the organisation.

The bargain with the employing organisation. Once again the bargain was unevenly balanced, with the organisation being asked to provide access and, as in this case, probably administrative support in return for a report on what the organisation might well regard as a low-priority matter. Even when a bargain was struck, and even if constraints on the research involvement were not made explicit, the researcher would probably be reluctant to impose on goodwill.

The employer-employee bargain. This was potentially the most difficult bargain to strike because the researcher had no

jurisdiction over its enforcement. The fear might well be, as in the study by Knibbs (1980) which was referred to in Section 4.2.3, that a critical comment about the organisation, made in the belief of anonymity, might be reported to management. An assurance of confidentiality might well be written into the bargain but a subject not completely convinced of the researcher's reliability might well withhold useful information in case its reporting might be attributable.

All such bargains depend on trust and it is clear that scrupulous attention to the details of a bargain must be given by the researcher, as otherwise any future research involving that organisation would be put in jeopardy. The details of the bargains entered into in the present research are given in Section 7.2.1.

7.2 THE FIELD RESEARCH

7.2.1 Selection of Host Organisation

A desirable host organisation would be one big enough to employ a wide range of staff in different departments, with a central administrative section which could attend to the distribution of instruments and results; one which operated an on-going management development policy, preferably with some

interest already expressed in the subject of time management. It would be likely to accept the researcher, probably because of the standing of Leicester Polytechnic, and would operate in a field which was familiar to the researcher.

Because most of the researcher's experience in dealing with organisations had been in the field of local government, a local authority was sought which matched these characteristics. The choice fell on the City of Birmingham, an authority with multiple powers and employing a large number of staff at middle and senior levels. The Personnel Department was active in promoting management development through a range of courses for middle and senior levels and the researcher had in fact contributed to several of the early General Management courses as guest lecturer/tutor. More importantly, the researcher was at the time of these early courses pilot-testing a series of self-report time diaries and these began to be used by participants in the courses for pre-course data collection. The principal tutor of these courses was personally interested in the time diary project, and had expressed interest in making more use of the data he had collected and analysed over a large number of courses.

Accordingly an approach was made to the City Council through the principal tutor, with an outline of the research proposals. The Personnel Department accepted the proposals on

the basis that the project could provide a form of post-course monitoring which would be helpful in future course planning.

The terms of the bargain were as follows:

- The Personnel Department would provide the necessary introduction to individual managers for the study, would administer the distribution and collection of questionnaires and would arrange interviews. In return they would receive a report on the project, including a summary of post-course comments about the General Management course and in particular the use of the time diaries in conjunction with the course.

- Individual managers would be invited to participate in the project on a purely voluntary basis, to complete questionnaires and perhaps to be interviewed. In return they would receive a note of their scores on questionnaires and a summary of all scores obtained. Those interviewed were made aware of the bargain with Personnel Department, and were assured that all comments made during the interview were confidential and that they would be reported in a totally non-attributable way. In return they were offered personal counselling on any time management issue and sight of the report to be submitted to Personnel Department.

7.2.2 Description of the Study

The Personnel Department selected as participants in the study those officers who had attended the previous five General Management courses. These courses were one week in duration, fully residential in an out-of-town college belonging to the authority. Before coming on the course, officers had been requested to complete 'Diary Stage One' from Time, the Essence (Austin, 1979) which had been pilot-tested during the early courses in the series. During each course summaries of the diary returns were made available to participants so that comparative results could be the subject of discussion and the basis of tutorial guidance.

The elements of the study were as follows

- analyses of the time diaries from the course, the time diary form being shown as Appendix 7.1;
- the I-E scale, entitled 'Attitude Questionnaire' shown as Appendix 3.2;
- the Time Questionnaire shown as Appendix 5.5;
- The Obstacles Questionnaire, entitled 'Obstacles to Time Management' shown as Appendix 7.2;

- a semi-structured interview of about one hour's duration based on the interview schedule shown as Appendix 7.3;
- the report of the study, submitted to the Personnel Department and available on request to participating officers.

The time diaries were not part of the research study as such but they provided a common introduction to the management of time and they are included here for completeness. The I-E scale and the Time Questionnaire were the same instruments as were discussed in Chapter 6 and Chapter 5 respectively. The Obstacle Questionnaire was developed specifically for this study; its development and purpose will be discussed in Section 7.2.3. During the interviews the basic questions shown on the interview schedule were used to give direction to the interviews but participants were encouraged to speak freely; permission was asked, and given without exception, to tape record the interviews so that transcripts were available for later analysis.

Method. The study was launched by the Assistant City Personnel Officer who invited the selected officers to participate, explaining the purpose of the study (see his letter, shown as Appendix 7.4). The three questionnaires were given in sequence: Attitude Questionnaire (I-E scale) followed

by Time Questionnaire followed by Obstacles Questionnaire. When all the returns from the Attitude Questionnaire had been received they were scored and a summary prepared for distribution. Individual scores and the summary were sent to all who had completed the questionnaire, together with the Time Questionnaire. When the returns were all received they were summarised in the same way on the form shown as Appendix 5.6 and sent out together with the Obstacle Questionnaire. No attempt was made to prepare any composite returns from this questionnaire, because its nature was descriptive rather than numerical, and because responses were of an individual nature suitable only for discussion with the subject concerned.

When this survey was being planned, it was thought to be essential that participation was completely voluntary. For this reason, when the City Personnel Department made the first contact with former course members there was no suggestion that the survey was a necessary corollary to the course. Inevitably this meant that there would be a progressive reduction in the number of officers actively taking part as the survey advanced. For those whose interest was not awakened by the early questionnaires or reports on the results, subsequent participation would be regarded as a low priority activity. The actual number of returns at each stage is shown in Table 7.1.

TABLE 7.1

SUMMARY OF RETURNS FROM THE STUDY

Total number of officers invited to participate	88
Summaries of time diaries available	65
Attitude Questionnaires returned	45 (1)
Time Questionnaires returned	30
Obstacles Questionnaires returned	15
Interviews conducted	15

Note 1: Of 45 questionnaires returned
3 were spoilt

Originally it was hoped to be able to interview all who had completed the diet of three questionnaires. For a variety of reasons this was not possible; similarly some officers who had not completed all three questionnaires but who had also been invited for interview were unable to attend. Reasons for non-attendance are shown on Table 7.2.

TABLE 7.2

REASONS FOR NON-ATTENDANCE AT INTERVIEW

Retired	1
Left job	2
In hospital	1
Did not wish to be interviewed	1
Failed to attend	1
Not available	2
Unable to contact	1
	<hr/>
Total	9
	<hr/>

In Figure 4.5 a Venn Diagram shows the inter-relationship between the principal returns obtained during this study, against the background of the total contributors to the analysis of the two main questionnaires. The inability to interview all who had completed the three questionnaires was a source of disappointment. This represented a loss in the number of comments which could be analysed, although the actual number of subjects participating is not a significant issue when the main purpose of the interviews is to gain an understanding of attitudes and beliefs. The picture presented by the diagram in Figure 4.5 is not tidy but it probably represents the reality of research.

The analyses of the results obtained from this integrative study are set out in Sections 7.3 to 7.6 inclusive. In each case interview comments are used to interpret the questionnaire returns. Only comments relating to the course are excluded from the analyses.

7.2.3 The Obstacles Questionnaire

There are many references in the literature of time management to what many refer to as time problems. Moore (1968) and Smith and Mackenzie (1981) surveyed more than a thousand managers to identify what problems affected their ability to manage their time. Newman (1977) and Humble and Spooner (1980) concentrated on a few problems which seemed to be commonly experienced and offered their advice on how to approach them. Ferner (1980) and Rutherford (1981) both recognised problems as important and both sought to meet them by setting them within the strategic cycle of time management. The present writer has for many years regarded developing an approach to time problems as a necessary step in the time management process and has found as a tutor that it is in the area of time problems that many managers find frustration and difficulty.

In discussions with managers a variety of reactions to the existence of obstacles has become apparent, ranging from accepting them as a necessary part of the job and as a challenge to be overcome, through frustration to an air of resignation, sometimes almost of pride that no-one else has so many time problems. These differences of attitude have seemed to be related to the general personality of the manager concerned and the idea was conceived of developing an

instrument concentrating on obstacles as an indirect measure of attitude to time and time management. Because obstacles form part of the experience of all managers, such an instrument would have the advantage of being closely related to the job. A corollary to this is that a description of how obstacles are approached is more nearly related to fact and everyday experience than a conventional attitude measure.

The first step in developing the instrument was the collation of time problems or obstacles and the sources mentioned above provided a start. The present writer's own experience in tutoring many workshops on the subject of time management has included the generation of lists of problems by participating managers. Many of these lists were retained, providing an additional source of problems. Because the list covered such a wide range of aspects of managerial work it was thought advisable to classify them into the following four groups:

- obstacles related to the content or timing of work;
- obstacles arising from the system or the organisation;
- obstacles concerning communication; and
- obstacles of a personal nature.

The full set of sixty-six obstacles divided into these four groups is shown in the questionnaire in Appendix 7.2. Respondents are invited to consider each list in turn and to identify the principal obstacles they have overcome and also the principal obstacles which still remain causes for concern. In the case of obstacles overcome, respondents are also asked to state the steps they have taken in order to overcome them.

There are several diagnostic purposes served by this instrument, as well as a didactic underlying purpose. The way in which a respondent completes the four lists may indicate an area of work in which he or she is less confident. The steps taken to overcome obstacles may reveal aspects of personality in that they may range from mere response to a procedure designed to manage the obstacles in future. Obstacles remaining causes for concern, set against those which have been overcome, may indicate areas in which chosen strategies have apparently failed. The way the questionnaire is designed encourages the respondent to acknowledge the merit of a positive approach. Finally, the inclusion of a list of obstacles of a personal nature is intended to remind respondents that they should not blind themselves to possible obstacles of their own making.

It is acknowledged that this instrument does not admit easy

interpretation, partly because the range of responses is extremely wide. Considerable experience of administering and interpreting the questionnaire would be required before significant inferences could be drawn. The questionnaire was developed specifically for the present research and only limited experience has been gained in using it. For these reasons the analysis of the fifteen returns in Section 7.6 must be regarded as exploratory rather than definitive. It is argued, however, that the steps taken to overcome obstacles represent a self-report instrument which can be useful in indicating temporal behaviour.

7.3 ANALYSIS OF RESULTS - TIME DIARIES

From a course tutor's viewpoint, completing a diary before coming on a course helps to focus the minds of participants on the forthcoming event as well as providing data which can be used as the basis of discussion during the course. The form used for this series of courses was 'Diary Stage One' from the workbook, Time, the Essence (Austin, 1979) which is shown as Appendix 7.1. The workbook suggests that spending an unusually high, or an unusually low, proportion of time under any one heading is worthy of further examination. For each heading a 'range indicator' is shown which is based on the probability of one individual in two showing results falling

within the range, one in four above it and one in four below it.

A summary of results for each course was distributed to members for comparison and discussion. These detailed results are irrelevant to the present study but in Appendix 7.2 combined totals are shown for all the diaries which were available for this study. The only figures which deserve mention here are that twenty-four diaries showed a high figure for travelling and twenty-eight showed activities started by self, out of sixty-five diaries summarised. The first figure reflects the number of participants who were based at area offices, depots or schools, for whom considerable travelling was unavoidable. The second figure reflects the relative seniority of the participants who enjoyed considerable discretion on how their time should be spent.

From the viewpoint of the present study the value of the time diary exercise is that participants had their awareness of time heightened by the exercise and their temporal behaviour questioned by peers and tutors. This means that at the time they started contributing to this study their minds were already prepared for questionnaires closely related to the time management aspect of their course. Some of the comments offered during the interviews are reviewed in this section in order to provide a backcloth to the more detailed comments on

the individual questionnaires. All names are fictitious.

Several participants referred to awareness or recognition:

It [the diary] made me aware; gave me an objective assessment of my week (Ms. French).

It is really a question of how aware you were of time. I think I was fairly aware, although some of the things I do, the ways I respond, are probably a result of the course (Mr. Anderson).

The section on time management made you really think what you were doing; I think that was one of the most effective areas of really analysing yourself and your job. It may be low key - how much you spend on this and that - but they are the 'nitty gritty' things that if there's a problem are going to affect the rest of your performance (Mr. Gamage).

The diary was a challenge; you were actually aware of how you spent your time. [You were able to] look at your own personality and understand how and why you reacted to situations as you did (Mrs. Raynor).

Maybe if you're in Management Services you go into all this but if you're a chemist time is endless. It never really hit me until I went into safety that there's never enough time to complete anything (Mr. Gamage again, a former chemist).

This last comment touches on a question which is relevant to this research: does the career help to form the attitude or does the attitude lead to the choice of career? There is probably no clear answer to the question but it seems likely that there is at least a relationship. It is an observable fact that there is a set of values which exists in any

profession or calling which new entrants quickly absorb; these values decide, among other things, whether time is a precious and fleeting resource or an eternity within which life roles can be played out.

Several managers expressed surprise at the results:

It was a new experience and awkward to do, especially in a job like this where you are flying around everywhere. I think I was amazed at the amount of time I travelled (Mr. Pick).

I was surprised at the number of interruptions I recorded. One thing I did, following the analysis of the diary, was to take the spare chair out of the office so that people wouldn't stay so long. By doing things like that I found I could create more time for myself (Mr. Weston).

Sometimes such a ready solution seemed unavailable:

I do analyse where my time goes and it worries me that I don't have time to chat with the officers I supervise; to them I might seem a bit abrupt and that does worry me (Mr. Anderson again).

Surprise was not experienced by all participants, however:

It pointed up this non-wastage of time. I don't think I had any surprises; perhaps reinforcement (Mr. King).

I got nothing out of it, I'll be honest. I spent a lot of time filling that in; you do all the analysis and our lecturers didn't convince me of the value of that (Mr. Holt).

It was no use - I didn't learn from it at all. Most of the course felt that way (Mr. Gregory).

For me it was less useful than for others. In a sense I knew the answers and the diary confirmed what I already knew. I do plan to a certain extent. (Mr. Dennis).

The comments from Mr. Holt and Mr. Gregory suggest that the use of a diary needs to be well introduced and well conducted. These two persons attended the same course.

One who acknowledged that his use of discretion was faulty said:

I had never really sat down and done it [completed a diary] and gone about it the right way . . . You can see over the week 'What the hell was I doing that for? What a waste of time.' (Mr. Gamage again).

Two interesting comments were these:

It was a useful exercise. On the course we worked in trios to discuss results and found that some of the people most opposed to keeping a diary were those who had most to gain. For example, site people who had no time to keep the diary because they were so busy making site visits and finding nobody there and so had to make another visit to see them. But still they rejected colleagues' comments that planning a time for the visit would save this time (Mr. East).

In my particular job with my priorities it wasn't quite as beneficial as it may have been in others. I work in a response situation and that will probably govern a lot of my working day. Other people may not be in that sort of position and feel that they would plan their day better and they could get benefit from it (Mr. Maddock).

This last point was echoed by Mr. Williams, who said 'it was not helpful for pressured jobs'. Mr. Pick had said that

keeping the diary was 'awkward to do'. Both Mr. Dennis and Mr. Neaverson used the word 'chore'.

There is no doubt that keeping a diary does make demands on the individual, who needs to be convinced that the price paid is going to be recouped in time saved as a result. This is part of the classic dilemma of time management:

- managers will not change the way they use their time unless they really want to;
- they are unlikely to want to change unless they see overwhelming evidence pointing to the need;
- they are unlikely to collect the evidence (by keeping a diary or similar data-gathering activity) if they think it might show their self-management in a bad light.

For the individual the possible benefits of keeping a time diary are at two levels. At the superficial level the very fact that times are being recorded heightens awareness that a resource is being used; this awareness may, but need not, stimulate a more careful use of the resource in future. At a deeper level the record ought to point to specific aspects of time use which are not regarded as satisfactory. For example, if interruptions are a cause for concern, one should establish who interrupts, how, when and how often so that corrective action can be aimed at the right target. This is the approach recommended in the workbook, in the form of a series of 'Diaries Stage Two' (Austin, 1979).

Conclusion. Although the diaries were completed well before this study commenced, it is reasonable to consider the comments made by the participants. These clearly indicate considerable differences between people, expressed in part in their attitude to time. It is evident that some of the people interviewed have no intention of changing the way they manage their time; and without that will to change, no change will take place. It is possible that some who have this attitude already manage their time very effectively, in which case no further action is required. It is also possible that organisational constraints such as were described in some interviews make it almost impossible to change even if the will were there. It is contended that there are many who do not fit in either of these categories who could improve the effectiveness of their time management if they wished. It was to help such people as these that the present research programme was conceived.

7.4 ANALYSIS OF RESULTS - I-E SCALE

Of the forty-five questionnaires returned three could not be scored because of irregularities in the marking of the forms. Two of these three participants were interviewed so that their contribution has not been completely lost.

Following the discussion in Section 6.3.3 on approaches to discrimination, the forty-two valid questionnaires were classified both by the additive method and also by weighted factor scores. In Table 6.10 the comparison between the scoring methods was shown in the form of a grid covering the whole sample. It will be remembered that the sample was divided into three approximately equal parts, those scoring lowest being classified as internals and those scoring highest being classified as externals. A similar classification for the small sample taking part in the integrative study is shown in Table 7.3

Using the same criteria as for the whole sample, the table shows that the small sample is similarly distributed to the large sample, the numbers falling within the low, medium and high groups by additive scoring being respectively fifteen, fifteen and twelve. In a classification by weighted scores on factor 1, however, it can be seen that nineteen questionnaires, representing 45%, fall into the external group. Seven of these would have been classified in the medium group by the additive method, suggesting that weighted scores provide greater discrimination.

TABLE 7.3

COMPARISON OF WEIGHTED FACTOR SCORES WITH ADDITIVE SCORES

Factor Scores			Number of respondents with additive scores of							
			low (internal)		medium		high (external)		Totals	
			0-8		9-12		13-23			
Factor (1)	Criterion 1	2	1	2	1	2	1	2	1	2
low	≤ -0.48	≤ -0.36	11	10	1	4	0	0	12	14
medium	> -0.48	> -0.36	3	3	7	8	1	7	11	18
	< 0.38	< 0.52								
high	≥ 0.38	≥ 0.52	1	2	7	3	11	5	19	10
Totals			15	15	15	15	12	12	42	42

Note 1 : Factor 1 is general luck;
Factor 2 is political control.

In general those participants who were interviewed agreed that the score they were shown (which was the additive score) was a fair reflection of their attitude. A review of some of the comments on their beliefs made by participants will allow comparisons with the classification. These comments will be grouped according to classification by additive scores.

Internals. Of the fifteen internals six were interviewed.

I'm probably more strongly internal now that I have been promoted. One still gets frustrated with the remaining things over which one hasn't as much influence as one

would like . . . To a certain extent I've always been that sort of person. I like to work things out and make decisions and implement results wherever possible (Mr. Anderson).

I have always had a firm belief in myself and also that each one of us, in a small or large way, are controllers of our own destiny . . . From the individual through small groups right up to the nation we very much control our own destiny. Within certain limits, of course - fate does play a part - but we play a very large part. Even in the election of a government, the final choice comes down to the individual (Mr. King).

These two are not only clear internals, but they claim always to have had those beliefs in themselves. Mr. King has also specifically mentioned government; his score is very strongly internal on the political control factor. The next two are equally clearly internal in belief but they acknowledge that this belief was not always as strong:

I have found through life that it's necessary to influence things . . . You can obviously influence your own future, and influence the future of others; others can also have an influence on your future - it's completely inter-relational. There is a random factor in this, called luck or whatever, but you can have a large push . . . It gradually evolved. I used to be lacking in self-confidence but it gradually changed in the twenties, saying, 'It's no use sitting back and just drifting through life' . . . Most of it you make for yourself . . . So if you want a better quality of life in any direction you go out and influence it. Some people don't identify the chances they get and say they don't have these opportunities (Mr. Dennis).

In a job like this, if we don't do anything

about changing the future, nobody will
So we are trying to influence the future . . .
. The way I was trained has helped to form
my attitude. I started as a gardener and
then did management training courses which
had a big influence on me . . . [Then there
are] things which are outside our control at
all and all we can do is to put pressure on
(Mr. Pick).

Comments from Mr. Dennis and also Mr. Anderson above are in line with social learning theory and the principle of self-development. 'In a job like this' from Mr. Pick seems to suggest not job demands but job opportunities; it supports the situation-dependence of the locus of control concept. Mr. Pick also refers to putting pressure on when something is outside his direct control; this corresponds with his strong internal score on the political control factor.

In the next comment many of the words are still there but the belief seems less strong;

There is an element of luck but people do tend to make, or seize, their own opportunities. Some people go and look for them but others - the opportunities are there but they just ignore them . . . I think people do by and large make their own lives, make their own opportunities and future. Sometimes you can hide away from outside issues and say, 'They don't affect me', but generally you know you're part of that so I would say I would have the same attitude [as for inside issues] (Ms. Jenkins).

Ms. Jenkins's additive score places her as a marginal internal; on the factor scores she is marginally internal on

general luck and bordering external on political control.

Another with similar beliefs is the following:

I'm prepared to try to influence things, to push the boat out, while recognising the constraints and realising that ultimately we may not win . . . I think my attitude is something which has developed. You have to come to terms with your own beliefs, your own standpoint, and you have to bring them into your everyday work. My own attitude has been moulded by the work; maybe they've made me a more 'political' person with the work and the power structures . . . Yes, I am very aware of the boundaries, the parameters and one must work within the constraints otherwise you get so disillusioned (Mrs. Raynor).

The frequent references to boundaries and constraints reflect Mrs. Raynor's fairly strong external score on the political control factor.

Altogether the six individuals quoted above all show an internal belief, as is indicated by the additive score. The differences between them seem to lie principally in their attitude to things which they do not control; they range from acceptance to being determined to influence them and this is reflected by their scores on the political control factor. The scores obtained by those interviewed are set out in Appendix 7.6.

External. Of the twelve externals three were interviewed.

To a certain extent I believe it is a case of being in the right place at the right time, if you call that luck. I think that plays a role but I still believe that you need to do your half of the bargain by doing your best to get on and push yourself along After seventeen years in civil engineering, now that I've come into local government where things tend to be very ponderous and slow, I have changed my attitudes to a large extent. In private industry I would have believed that my own abilities would have been enough, but I see now in local government it's a case of being in the right place at the right time more so than in private industry (Mr. Gregory).

If you are running your own business then largely you can create your own destiny. In a large organisation some people can manoeuvre but at the end of the day, if we're talking about promotion, it's opportunity and being in the right place at the right time (Mr. Williams).

I would now probably lean towards the view that how you do in your career depends on being in the right place at the right time, although you can obviously do a lot for yourself like going on courses etc. I don't think you are totally in control of your own destiny (Mr. Maddock).

The phrase which all three of these participants used, 'being in the right place at the right time' does in fact appear in the external choice of one of the items on the I-E scale but it is hard to imagine that all three would have remembered that, many months after completing the questionnaire. The phrase seems for all of them to typify an external belief. Reference was made in Section 7.3 about the values attaching to particular professions; these values for Mr. Gregory are

largely responsible for a change of attitude on his part.

Two of these managers mentioned politics and the possible consequences of their attitude have emerged:

I'm very cynical. I don't think that politicians are about politics, it's about keeping power (Mr. Williams).

I tend to be more cynical about politicians and to a certain extent if you're not careful you get into a 'couldn't care less' attitude. It can lead to 'Why should I worry?' You've got to pull yourself back from that, and take a more positive attitude (Mr. Gregory).

This seems like the manager trying to motivate his disillusioned other half. A similar view was expressed by Mr. Maddock, who extended the argument as follows:

I try not to let my attitude affect my judgment at work and carry on as normal, doing what I think is a good job, then sooner or later, hopefully, it may be rewarded. I'm not naive enough to think that it will definitely be rewarded . . . Possibly ten years ago I would have thought that if you did a good job you would be rewarded adequately. I don't believe that so much now . . . It would be fair to say that my change in attitude has something to do with the sort of things that have happened to me that I think are either fair or unfair.

The last part of Mr. Maddock's statement seems to be a very good example of the operation of reinforcement theory.

Another way in which ability could be hidden was mentioned by Mr. Williams:

It's one thing to have ability and it's another thing to have the opportunity to display that ability - and that opportunity isn't always of one's own creation.

Mr. Gregory was one of the very few who expressed surprise at the score obtained, thinking that he would be nearer the middle. The first quotation from his interview might suggest the reason. If he thinks of himself as he was during his years in civil engineering, where he felt 'you had to push yourself along', then a score towards the middle would not be unreasonable. The later part of the quotation, however, suggests that he is rather disillusioned with some aspects of local government and this probably formed the attitude of mind in which he completed the questionnaire. His score on the general luck factor is in fact very strongly external.

Unclassified. Interviews were conducted with four of the fifteen whose score placed them in the middle group which is not classified either as internal or as external. Two of the four saw themselves as having a medium attitude:

I would say that I am geared to the middle, partly because of the job. You can't afford to go too far with the management or the unions but keep to the middle which is probably safer. . . . As a chemist you work on positive things the right way. When I went into [my present job] I found that there were a lot of grey areas, the law being the greyest of the lot. Having had a positive attitude when I was doing chemistry I found that law was misleading, because I couldn't get to grips with it perhaps. So when I was training for my present job I decided that the middle way was the better way of managing the job (Mr. Gamage).

I thought my answers tended to be contradictory; in some cases I went to one extreme while in others I went to the opposite extreme . . . Outside pressures have made my actual job change but I still have the same attitude to staff which is fairly easy-going and trying to be helpful, to create a pleasant atmosphere to work in. (Mr. East).

These two comments so clearly avoid extreme statements that they constitute a good argument for an unclassified group.

In the following quotation what seems initially to be a balanced statement receives a twist:

Given the choice I would choose my own destiny bearing in mind that half the time the decisions are made for you. . . . In local government I have worked on problems where we have put up a sound solution which for political reasons is never pursued. I find it very frustrating (Mr. Holt).

It is not surprising that Mr. Holt had a medium score on general luck but was an external on political control.

A less pessimistic view on political influence was expressed by Mr. Gamage:

Individual people can influence governments, if they are prepared to do it, but I don't think that by sitting back and simply using your vote, you are really having an influence.

Mr. Gamage's scores on both factors were medium. A stronger view on political control came from Mr. Neaverson:

I believe in democracy and therefore one has to allow other people to make certain decisions and you have to back them . . . Yes, I think we get the governments we deserve. The recent elections reflect the egocentric feelings in society, which again reflect rioting, degeneration of societal standards.

Mr. Neaverson's case is one where the medium classification of the additive score conceals strong feelings. As can be gathered from the above quotation his score on the political factor was strongly internal. His strongly external score on general luck is illustrated by the following:

I think I've changed a great deal over the last year or so from the experience here. When I first came here we adopted a fairly positive plan of progress - we seemed to know where we were going. As time has gone on we have had a change of organisation. At Christmas we had a new appointment and since then any attempt at decision-making can quickly be over-ruled by someone else.

This is another example of the effect of reinforcement in a negative direction; Mr. Neaverson himself clearly saw the change as one of retrogression.

One final comment from this group is worth recording:

There is a difference in attitude between people in mid-career and those just starting out but this is a matter of social change (Mr. Holt).

This seems to be an area worthy of greater investigation than it has received. Several of the people interviewed have told how their attitudes have changed, whether through promotion or a set of unfavourable experiences. Social learning theory itself suggests that people can train themselves to become more internal in their beliefs. Yet in the sources referred to in Chapter 6, even those using non-student samples, no particular effort has been made to distinguish between experienced and less experienced respondents. It seems to be an area where greater study would be rewarding.

Two other interviews. Mr. Weston failed to answer all questions on his questionnaire but those he did complete

suggested that he was an internal. He agreed that he was, but did not always have that belief:

I used to be a reserved kind of character. The person you see today was moulded on a building site shortly after I started work. I almost didn't get my first apprenticeship because I didn't want to go to college. . . . Later I thought I wouldn't get anything sitting down waiting for it to happen; I saw people who had been on site all their lives and I didn't fancy that so I started looking at ways out . . . I would be slightly less positive about my influence on government, but within the colleague group I certainly do have influence. I don't always get my own way but people are willing to listen to my point of view, including my superiors, so I do have a belief that I can influence.

Mr. Weston also echoed Mr. Holt's statement in saying 'people's attitudes change with maturity anyway' and suggested that he was not the same person at home:

At home it is all a matter of discussion. At work you have to be rather autocratic in your dealings with your own section.

Mr. Weston's comments suggest that he would probably be an internal, at least on the general luck factor, but he might have scored more externally on the political control factor.

Ms. French took a different line by marking both alternatives on some of the questions.

I did it intentionally. I could have marked both or either - there were many questions where I thought both options were equally

true or valid or they weren't . . . What I wanted to do with this was to say that I didn't either identify or accept the trends [see note]. I accept what you are saying about an inclination or trend but at that time at least I didn't want to accept those parameters. Instead of validating the questionnaire which I didn't want to validate I did what I felt like doing.

Ms. French who speaks English as a second language, was probably meaning to refer to a tendency to agree with one or the other option. In refusing to express an opinion which might be valueless on some questions, and she mentioned questions about children at school as being 'remote from myself', she preferred to be completely honest and invalidated her response. In any general questionnaire it would be difficult to establish how many responses are marked at random, simply to complete the questionnaire. She continued:

I think that objectively I am a fairly intelligent and active person but either because of these too-high standards or because of sometimes lack of motivation or confidence I think I have done little justice to my ability.

From this comment the conclusion might be drawn that she felt that she often under-performed, which resulted in a negative reinforcement, which might have made her feel more like an external than an internal.

Conclusions. Several conclusions can be drawn from the analyses of the I-E scale scores and the interview comments.

1. The analysis of the forty-two returns is broadly similar to that for the whole sample. The relatively large number of externals revealed by the factor score method is noteworthy if not significant.
2. There is abundant support for the typical attitudes of internals and externals as described by Rotter (1966). Several of the managers interviewed provide good examples of general reinforcement theory; three managers who previously held internal beliefs became disillusioned and scored strongly as externals.
3. Evidence given during the interviews suggests that beliefs about locus of control
 - are situation-dependent, in that they
 - are influenced by the job and probably
 - related to values; also that they
 - relate to maturity.

This last point seems to have been under-researched and yet, if true, could influence the norms which some sources have reported.

4. The recommended method of discrimination by means of weighted factor scores has proved helpful in recognising

beliefs which are hidden by the additive method. One of the six internals scored external on political control; one of the unclassified also showed an external score on political control while another showed strongly internal on political control but strongly external on general luck.

7.5 ANALYSIS OF RESULTS - TIME QUESTIONNAIRE

7.5.1 Comparison with Whole Sample

Of the forty-five questionnaires sent out with the scores of the I-E scale, thirty were returned. To compare the study sample with the whole sample, the means of the factor scores on the five factors were first compared, these being shown on Table 7.4.

TABLE 7.4

MEANS OF FACTORS IN STUDY SAMPLE

	Mean
Factor P	0.16
Factor Q	-0.06
Factor R	-0.09
Factor S	0.03
Factor T	.03

For the whole sample the means in each case were 0.00 and the standard deviations for the five factors were respectively 0.89, 0.89, 0.83, 0.65, 0.61

It can be seen that the study sample reflects closely the means for the whole sample.

The main concern of this section is to enhance understanding of the meaning of the five factors. It is also of interest to compare the samples on the basis of their representation in the three characteristic attitudes discussed in Section 5.5. This comparison is shown on Table 7.5.

TABLE 7.5

REPRESENTATION IN CLUSTERS

	Study sample		Whole sample	
	N	%	N	%
Cluster F 'harassed optimists'	13	43	232	52
Cluster G 'contented planners'	15	50	180	41
Cluster H 'fatalists'	2	7	30	7

Once again the study sample shows very similar representation in the three clusters compared with the whole sample.

This section continues with analyses of the comments made during the interviews. To facilitate reference to the originators of the comments, the fifteen respondents are listed in Table 7.6 together with their scores on the five factors.

TABLE 7.6

LIST OF RESPONDENTS SHOWING FACTOR SCORES

	P	Scores on Factor			
		Q	R	S	T
Mr. Anderson	-.09	.13	-.55	-.77	-.76
Mr. Dennis	-.11	.57	-1.03	-.18	.06
Mr. East	-1.21	-.93	.15	.68	.06
Ms. French	-2.37	.43	1.26	1.04	-.23
Mr. Gamage	1.11	-.11	.82	.79	-.01
Mr. Gregory	1.62	-.72	1.20	.52	-.27
Mr. Holt	.43	1.28	-.68	-.35	1.34
Ms. Jenkins	1.41	-.64	-.19	-.28	.11
Mr. King	.75	-.67	-1.00	-1.55	.35
Mr. Maddock	-1.56	.06	-1.29	.04	-.21
Mr. Norman	.06	-1.00	.36	1.16	-.24
Mr. Pick	.70	-.86	-.60	.48	.80
Mrs. Raynor	.89	2.24	-.60	.84	.12
Mr. Weston	.83	-.52	-.48	-.29	.47
Mr. Williams	-.82	-.66	.79	.34	.59

7.5.2 Factor P - Being Organised

Comments from the managers who scored most highly on this factor included the following:

Time is extremely important; my own assessment is that it is the one commodity that is extremely wasted in local government (Mr. Gregory).

I certainly try to be organised, although I'm not as organised as I would like to be . . . I'm always pushing myself in that way - I'm never completely satisfied with a lot of the things that I do (Ms. Jenkins).

If I worked in a way that there was a regular pattern I could manage my time well but I've only got to have one or two deviations or problems and my normal programme gets behind . . . I still work through my planned work even when I get interrupted by help calls (Mr. Gamage).

I like to be aware of what is going on, certainly if I'm in control of it. I put a lot of time into that (Mr. Weston).

There is a picture of restless determination that time should be well spent, and that the job should be done to the highest standard possible.

Low scorers added the following comments:

I find it frustrating that I am not able to manage time as I would like to but it is because at the level I am you are very much at the beck and call of others . . . I admit I'm not as well organised as I'd like to be; it's something I'm trying to improve since the management course (Mr. East).

If I'm honest I tend to work on a day-to-day basis. We're talking about service delivery with a service department and to my mind that is the all-important thing . . . I'm prepared to have a lot of my time during the working day disrupted to overcome problems from the customer's point of view. I do plan ahead as I'm able to do that, but I do like to get involved quickly with problems that arise to try to sort them out quickly (Mr. Maddock).

It made me feel very unhappy to see even in a questionnaire like this it showed how dreadful I was feeling. I was feeling low and I'm sure it showed here in my score (Ms. French).

It is clear from Mr. Maddock's statement that he rates customer satisfaction as pre-eminent, superseding the virtues of planning ahead. Although Mr. East shows that he, too, is concerned to satisfy the demands of others, he admits that he could probably keep them from completely disrupting his own plans. Ms. French had explained before this statement was made that the questionnaire was completed at a very difficult time for her, with acute stress at work while she was going through a difficult period in her private life. It is probably fair to say that attitude questionnaires are very subject to emotional disturbance; from the general tenor of this interview, an interviewer would have reservations about the scores obtained.

Several other managers emphasised the virtue of punctuality, citing particularly their frustration when meetings started

twenty minutes late, which seemed to be a common occurrence.

The waste of time was colourfully condemned in this statement:

Time is the most precious item that we've got. Any waste of that commodity amounts to a mortal sin (Mr. King).

7.5.3 Factor Q - Present-Rootedness

An alternative name for this factor would have been 'lack of future orientation' and it is perhaps significant that the only comments recorded during the interviews concerning this factor refer to frustration or disillusionment:

I try to be realistic. I've gone about as far as I am going to in this authority. Although people won't admit it, unless you've got a degree you can forget it. They're not interested in what experience you've got; you've got to have a degree (Mr. Holt).

The questionnaire was completed just before we had a reorganisation which was badly handled and we were kept in the dark; I felt oppressed at the time (Mrs. Raynor).

The first statement reflects a deep-rooted dissatisfaction with the system which holds no hope for him in the future. The second statement is more evanescent; the implication of the phrase 'at the time' is that the situation improved later. At the time, Mrs. Raynor's frustration was just as deep as Mr. Holt's and it emphasises again how sensitive the answers to some questions on an attitude

questionnaire are to emotional states.

The relative absence of recorded comments specifically on this factor may suggest that the attitude represented is more deep-lying, almost a meta-attitude. If this is the explanation, the lack of hope for the future could be internalised as a symptom of a general malaise, which would be more difficult to bring into the discussion in a semi-structured interview. This comment is not inconsistent with the correlation, reported in Section 6.3.4. between a positive score on this factor and external locus of control.

The difficulty in explaining positive scores on the factor extends to negative scores as well. It would not be reasonable to assume that a negative score indicates a future orientation, although a respondent with a future orientation would almost certainly score negatively on the factor. This difficulty is surprising, given the relatively high variance (11.2%) associated with the factor (see Table 5.9 in Section 5.4).

7.5.4 Factor R - Personal Harassment

Harassment was perceived differently by different respondents;

Yes, I think I do tend to take my worries home. I hate to be criticised. I like to be thorough and of course that takes time . . .
And the prevailing mood in local government

is not to take chances. My boss says that you're only as good as your last achievement. If you make a mistake he remembers that for an awful long time. All the good work you've done can be overcome by one hasty decision, so that could add to your harassment every time you cut a corner or take a risk (Mr. Williams).

I don't feel harassed; I tend to be a fairly level-headed person and things don't worry me. Perhaps the high score means that I am well aware of the pressures - in fact I enjoy it. I see people in all sorts of situations and I see people going over the top through their work. My own philosophy is that no job is worth that if it is going to damage my health to that extent (Mr. Gregory).

I don't think it's the harassment of the job that gets me down; the frustrations of not being able to do it [because decisions keep getting overturned] do get me down (Mr. Neaverson).

It seems that a potentially harassing job can induce a high score on this factor, whether a feeling of harassment follows or not. Mr. Neaverson's frustration is an emotion not unlike a reaction to being harassed, but his score is modest and he does not feel harassed as much as annoyed with an individual. Mr. Williams' reaction is the classic precursor of stress, which seems to be accentuated by an insensitive (or malicious?) boss. Mr. Gregory seems to have an ideal attitude towards a demanding job; the job apparently needs a flow of adrenalin but this adds to his enjoyment. Two other respondents take a similar view and in fact score low on this factor:

Even though the job is potentially harassing - I do get a lot of that - I try not to take it personally; I feel that the job and not the person is being attacked. I've still got confidence in myself (Mrs. Raynor).

It's probably fair to say that I expect pressures but they don't worry me. I meet all kinds of people and I like to think I have the confidence to deal with each one as it comes. So I don't personally feel that it's a harassing sort of job although I agree a lot of people would (Mr. Maddock).

One respondent who also scored low on the factor described his philosophy in these words:

No, I don't feel harassed. I've never been in a job where I've felt over-pushed - most of the pushing comes from within myself. I am highly organised in the work situation but I'm a very relaxed person during my off-duty hours (Mr. King).

This reference to relaxation will be taken up again under Factor T.

7.5.5. Factor S - Changeability

Two respondents said that they greeted change enthusiastically:

Yes, I look for change because I get bored once I've done a thing. I love starting new things but once I've cracked the novelty or the difficulty . . . [sentence not completed - significantly?] (Ms. French).

I like to think I'm creative - not artistic, but creative with people, bringing the best out of them and developing new things and given the chance I will initiate things myself; I'm prepared to push the boat out (Mrs. Raynor).

For several, change is seen as a desirable part of the job:

Change is familiar as I'm used to moving from one site to another and I enjoy that. I would hate to work in the same place, with the same faces for the rest of my life (Mr. Gregory).

I'm prepared to change, but I tend to come up with ideas myself rather than have them imposed on me. My method of work and the results induce me to see a better way of doing things (Mr. East).

Recent legislation needs change so you need to be able to adapt. An officer [in my department] needs to change to keep abreast (Mr. Gamage).

You've got to adapt to changed conditions or you'll be one of yesterday's people and you'll always stay in the same job (Mr. Weston).

There is an implication, particularly from Mr. East, that there is a difference between desirable change (which is introduced by the speaker) and unavoidable change (which is introduced by others). For some the greater virtue is consistency:

I like to think I'm consistent but maybe others should judge. I enjoy change if I can see something positive coming out of it (Mr. Neaverson).

What I can't abide is change for change's sake. Change should have good reason and I get annoyed when it is unnecessary or over-complicated change. I am for change, but evolution not revolution (Mr. Anderson).

There were in fact few who scored strongly negatively, probably because the negative of the questions asked seems to

imply resistance to change rather than consistency. Mr. Neaverson was the only one who used the word 'consistency' without being prompted by the interviewer.

7.5.6 Factor T - Relaxed Style

There are these other considerations of time: you could be appearing to work but not be working. Some people can be always busy and flit around but their output may be only a fraction of that of someone just quietly getting on with the job (Mr. Gregory).

The phrase 'just quietly getting on with the job' probably catches the meaning of this factor as well as any phrase could; it describes relaxation as freedom from stress and implies confidence in one's own performance, which many observers would describe as an ideal state for effective management. Another comment which supports the rational view is:

I believe that once a policy decision has been made whether or not you agree with it, it's your job to work towards that end. I am not particularly political and I believe I should do the best I can for whoever is in power (Mr. Holt).

Others who have accepted relaxation as a virtue which may have to be learned are:

I used to be tense. But with job interviews, for instance, if you are coming across as a

flappable kind of person, that's usually not the kind of person they are looking for . . . I'm more relaxed at home because there aren't the pressures of getting the job done; at work I'm paid to make decisions and I stand or fall by them and I take the responsibility for that (Mr Weston).

It comes with time. When you're familiar with the job - feet well under the table - you firm up relationships with workmates and over a period of time it becomes more relaxed, more natural (Mr. Maddock).

When one is a leader of staff one has to put on a mask of not being harassed yourself to keep the team going. One doesn't want to let steam off, so tends to keep tension to yourself (Mrs. Raynor).

Mr. Weston's distinction between pressure at work and relaxation at home was referred to under Factor R and found echoes in other statements:

There are times when I'm over-active. I don't know whether I've a relaxed style - sometimes I don't feel as though I have, but I do enjoy leisure (Mr. Neaverson).

I tend to follow gardening and the more relaxed pursuits off-duty and then there is a complete switch over when I go to work (Mr. King).

Those scoring more to the negative pole on this factor acknowledged tension:

Yes I am tense. My wife would say, 'What's it all about? Have you brought a lot of work home tonight?' (Mr. Williams).

Finally, on being told that her score on this factor was very low:

Good grief! Yeah! That doesn't surprise me.
I wish I were more relaxed. I find it very
difficult to relax - I get all wound up (Ms.
French).

Review of the transcripts of some of the managers who did not score highly on this factor has revealed no reference to the factor at all. There is no suggestion that the people concerned are tense, but it seems possible that their approach to their work is more intense, without concession to the need others may feel to relax. This impression has emerged only in retrospect; it would have been useful to have discussed this possibility as it bears on the main reason why this factor was retained in the questionnaire in spite of slender statistical support.

7.5.7 Three Characteristic Attitudes

In Section 5.5 the possibility was discussed of describing managers whose attitudes as measured on the Time Questionnaire clustered around a characteristic centre. In Table 7.5 a summary of the clusters of those who participated in the present study was compared with the figures for the whole sample. Since fifteen of these managers have revealed their personalities in the interviews, it is interesting to consider further this allocation to clusters (which has been done by purely statistical process as described in Section 5.5). In Table 7.7 the allocation to clusters is shown, together with

the classification of the managers on the I-E scale (see Section 7.4). For simplicity in analysis, internals and externals are classified by the additive method. (A table showing this comparison of classification for the twenty seven respondents who completed both questionnaires is shown in Appendix 7.7).

TABLE 7.7

SUMMARY OF RESPONDENTS BY CLUSTER AND LOCUS OF CONTROL BELIEF

Classification by I-E Scale Score

Cluster F (characterised by low factor P and high factor
R scores) HARASSED OPTIMISTS

Mr. East	Unclassified
Ms. French	Not scored
Mr. Gamage	Unclassified
Mr. Gregory	External
Mr. Neaverson	Unclassified (classified by weighted factor scores as external on the general luck factor and internal on the political control factor)
Mr. Williams	External

Cluster G (characterised by high factor P and low
factor R scores) CONTENTED PLANNERS

Mr. Anderson	Internal
Mr. Dennis	Internal
Mr. Holt	Unclassified (classified by weighted factor scores as external on the political control factor)
Mr. Jenkins	Internal
Mr. King	Internal
Mr. Maddock	External
Mr. Pick	Internal
Mr. Weston	Not scored

Cluster H (characterised by very high factor Q and high
factor S scores) FATALISTS

Mrs. Raynor	Internal
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The six classified as 'harassed optimists' all scored positively on factor R (personal harassment) and three scored negatively on factor P (being organised). Both Ms. French and Mr. Neaverson reported a high degree of job-related stress which probably influenced respectively their questionnaire scores and interview comments, but the other four, judging by interview comments alone, are quite well classified. The tendency to externality on the I-E scale fits this classification.

The eight classified as 'contented planners' all scored negatively on factor R (personal harassment) and only Mr. Maddock (the only external on the I-E scale) scored strongly negatively on factor P (being organised). From the interviews one might judge that Mr. Anderson and Mr. Dennis would have had a higher score on factor P if they had not been so self-critical, setting themselves a high standard. It is observed that six of the eight also scored negatively on factor S (changeability). The description again seems to fit the eight personalities well and also relates well to the tendency to internality on the I-E scale. This follows in part from the negative correlation between factor P and the general luck factor (see Section 6.3.4.)

The single factor score which classified Mrs. Raynor as a 'fatalist' was on factor Q (present-rootedness). Her comment

'I felt oppressed at the time' could have explained at least some of this high score; her scores on the other factors would suggest classification with the contented planners.

In general the clustering provides a remarkably accurate picture of those who were interviewed. The actual scores on each factor are shown in Table 7.6.

7.5.8. Discussion

When the meaning of the factor scores was discussed with interviewees there was a general acceptance that the scores represented a fair reflection of their attitude to time. The interviews revealed, however, differences of interpretation of questions which need to be discussed.

The second of the three objectives set out for this integrative study in Section 7.1.1 was:

by interviewing participants in the integrative study to gain a greater understanding of the two principal instruments and their statistically determined factor structure.

It is appropriate now to discuss this understanding in the light of the interpretations put upon the items in the Time Questionnaire.

Factor P - Being organised. No evidence emerged from the interviews which might suggests confusion or different interpretations. This factor seems satisfactory, uncomplicated and acceptable as it stands.

Factor Q - Present-rootedness. A high score on this factor suggests a lack of hope for the future and an alternative name for the factor could be 'lack of future orientation'. A defect of this factor is that it is difficult to assign a meaning to a negative score. Another defect, as was pointed out in Section 7.5.3, is that it seems to be sensitive to different emotional states, thus measuring an underlying state of mind rather than an attitude in the same sense as the other four factors. A strong argument for its retention is the relatively high percentage of variance explained by this factor.

Factor R - Personal harassment. One of the meanings assigned to the questions making up this factor was the perception of potential for harassment in the job. Some participants scored highly on the factor although they were clearly not made anxious by this potential for harassment; indeed one or two relished it. More useful as an attitude to time is the other interpretation which is that of actually feeling harassed.

Factor S - Changeability. Attitude to change seems to

differentiate between respondents, judging not only by the scores but also by the different comments recorded. Two possible explanations for a negative score are the virtue of consistency and the less valuable resistance to change. The factor seems a useful one but this question of alternative explanation needs to be answered.

Factor T - Relaxed style. Statistically this was the weakest factor and it contributes nothing to differentiating between three clusters of respondents. Nevertheless, judging by the interesting comments which were made during interviews, the concept of relaxation is potentially useful. A defect of the factor as it stands is that a high score may be obtained not only by relaxed mastery but also by indifference. Another possible defect is that a negative score may indicate either tension or simply a self-denying concentration which does not allow relaxation when work is so pressing.

Possible remedies. In order to understand why remedies should be necessary, it is helpful to return to the origin of the questionnaire. The Wessman Temporal Experience Questionnaire contained eighty items which were arranged as four bipolar factors, each pole containing ten items. When that questionnaire did not yield a similar solution with British managers, a satisfactory factor structure was obtained by the progressive removal of items by mainly statistical criteria

until only fifteen remained in the present Time Questionnaire (TQ). At the same time the actual wording of the questions was unaltered, in the hope that some of the virtues of the original validity tests conducted by Wessman (1973) would be retained.

The virtues of the present TQ are its simplicity and brevity and the almost complete lack of overlap between factors - each item loads distinctively on only one factor. The resulting dependence on only three items for each factor, however, makes the new instrument very sensitive to interpretative differences. There seems to be a good argument in favour of rewording some of the questions, perhaps even replacing some by other questions to avoid misinterpretation. It is also arguable that a slightly longer questionnaire with perhaps five questions loading on each factor would produce more consistent results, even if some overlap between factors was found to occur. The guideline mentioned in Section 5.3.1 was that 'only a few multiple factor data variables should be used' (Comrey, 1973, p.210) so by that guideline the criterion of no overlap in the development of the TQ was unnecessarily stringent.

In summary it can be seen that the information gathered during the interviews has been of inestimable value in refining the TQ. It is felt that the TQ has proved to be a useful

instrument to assist in defining attitude to time and that the refinements mentioned would allow substantial validation tests to be carried out.

Three Characteristic Attitudes. It is proposed that characteristic attitudes can be defined which can be linked with characteristic temporal behaviour patterns. At best this might allow generalised statements to be made after the manner of statements about internals and externals in locus of control beliefs. At worst the attempt may prove to be little more than a statistical abstraction. The differences between cluster centres, particularly between the two major clusters F and G, are not great, which suggests difficulty in sustaining any differentiation. On the other hand, the allocation of the interviewees as described in Section 7.5.7 has proved to be remarkably accurate. If the TQ is refined as suggested above, the clusters would need to be redefined and verified with a more comprehensive interview programme. It would be interesting to see whether this redefinition would help to clarify any distinction between clusters.

7.6. ANALYSIS OF RESULTS - OBSTACLES QUESTIONNAIRE

7.6.1 Method

The final instrument distributed to those who had returned the TQ was the Obstacles Questionnaire, shown as Appendix 7.2. It will be remembered from Section 7.3.2 that this was divided into four lists, each list containing obstacles linked to a theme. On each list respondents were asked to mark up to three obstacles which they had been able to overcome and indicate how they had done so; they were also asked to indicate any obstacles which were still giving them cause for concern. It will also be remembered that this instrument had not previously been tested, except for the usual checks on clarity of wording which were carried out with four colleagues who were experienced in the design of questionnaires. As a result the administration of the questionnaire as part of this study is in part an exploration into its potential usefulness in providing information about respondents' temporal behaviour.

Fifteen questionnaires in all were returned, completed in different degrees of comprehensiveness. In the analysis the following were the questions to which answers were sought:

1. Did any of the lists indicate that there was a

particular theme which was a fruitful area of successful management or, alternatively, a difficult area for the respondent?

2. Did the actions recorded for overcoming obstacles indicate any preferred strategy?
3. Were the strategies used in overcoming obstacles or the causes for concern related in any way to attitudes to time?

An attempt was made to classify responses according to a preferred strategy. From a number of possible classifications a model which distinguished between different degrees of positive action was finally selected:

- response: any immediate action designed simply to overcome the obstacle at the time:
- corrective action: an action involving some organisation designed to overcome repetitions of the same obstacle; examples are 'ignore trivia', 'do it myself', 'work the system';
- planning action: an action involving some anticipation; examples are 'contingency plans', 'establish priorities',

'write procedures';

- communication: an action involving communication with others; examples are 'establish support', 'negotiate', 'delegate', 'spread the blame'.

7.6.2 Results

Comparison of lists. The number of mentions varied only slightly between the four lists, there being fewer mentions on List C (communication) and List D (personal). The numbers are shown in Table 7.8.

TABLE 7.8

NUMBER OF MENTIONS ON THE FOUR LISTS

	Obstacles overcome	Causes for concern
List A (content of work)	37	39
List B (organisation)	34	39
List C (communication)	32	33
List D (personal)	31	32

An interesting feature of the number of times each obstacle was mentioned was that only two remained without mention. The most frequently cited obstacles overcome were 'crises, emergencies' and 'deadline' in List A, together with 'attempting too much at once' in List D; all of these were quoted seven times while they were quoted only once or twice as causes for concern. The most noteworthy causes for concern

were the group of obstacles concerning priorities in List A: 'unclear objectives', 'other people's priorities', 'unrealistic expectations by others' and 'changing priorities' together were quoted twelve times, against only four quoted cases of obstacles overcome. Another group from List A was the group: 'waiting for decisions', 'waiting for the boss' and 'waiting for others' which together were quoted ten times as causes for concern, but only six times as obstacles overcome. The most frequently mentioned obstacle in List B was 'poor organisation by others', mentioned six times as a cause for concern and three times as an obstacle overcome.

Although eleven respondents reported fewer than three obstacles overcome, and seven reported fewer than three causes for concern, no discernible pattern emerged to indicate particular strengths or weaknesses.

Strategies for overcoming obstacles. Of the four strategies 'response' implies a minimum of decision-making: 'get rid of this annoyance as quickly as possible'. 'Corrective action' implies a pragmatic and organised way of managing situations. 'Planning action' acknowledges that the obstacles concerned are likely to recur frequently and provides a way of reducing them to the level of normal managerial process. In contrast to 'corrective action' and 'planning action', which involve the individual manager making decisions alone, 'communication'

clearly involves other people; positive strategies like negotiation and delegation are included here, as are the more negative approaches like spreading the blame: 'help, please, I can't handle this one alone'.

When the strategies employed by each of the fifteen managers were listed under this classification, several features became obvious. Four managers employed either corrective action or planning action strategies for more than three out of four obstacles overcome; three of these were interviewed and gave the impression of being strong and competent managers. Three others used communication strategies more than any other category; from the interviews one of these who delegated a great deal also appeared strong and competent whereas the other two appeared to use other people to help them make up their own minds. These comments, although purely subjective and without a well-researched basis of judgment, suggest that the classification is helpful. A full list of the strategies employed is given in Appendix 7.8.

Relationship to attitude to time. In Section 5.5 a typology was developed which allowed managers to be classified as 'harassed optimists', 'contented planners' or 'fatalists'. A possible relationship between obstacles which remain as causes for concern and harassed optimists seems worth exploring, as does a possible relationship between strategies for overcoming

obstacles and contented planners. The strategies used by managers in each of the three clusters or types are set out in Table 7.9.

TABLE 7.9

STRATEGIES EMPLOYED BY MANAGERS OF DIFFERENT ATTITUDE TYPES

Number of strategies (1) employed by managers classified as:

	Cluster F 'harassed optimists' (N=7)		Cluster G 'contented planners' (N=6)		Cluster H 'fatalists' (N=2)		Total (N=15)	
	no.	%	no.	%	no.	%	no.	%
Response	5	(2) 46 7	3	27 8	3	27 13	11	100 8
Corrective action	25	53 32	14	30 37	8	17 33	47	100 33
Planning action	26	61 33	10	23 26	7	16 29	43	100 31
Communication	22	57 28	11	28 29	6	15 25	39	100 28
Total	78	56 100	38	27 100	24	17 100	140	100 100

Note 1 : Two strategies were employed to overcome an obstacle in six cases

Note 2 : Upper figure is % of row
Lower figure is % of column

A curious feature of this table is that the contented planners reported just over six obstacles overcome per person, compared with eleven and twelve reported by the other two groups. Comparisons between groups therefore need to be made on the basis of the number of strategies employed. Response strategies proportionally appeared to be favoured by fatalists but not by harassed optimists, although no serious judgment can be made on such small numbers. Harassed optimists recorded a bigger percentage of planning action strategies than expected, while contented planners' percentage was smaller. These figures were reversed for corrective action strategies, where the number recorded by contented planners was higher than expected, while that for harassed optimists was lower.

The distribution of causes for concern is shown in Table 7.10, from which it can be seen that the number of obstacles recorded per person by contented planners was lower than the norm. This might have been noteworthy were it not for the even lower number per person of obstacles overcome. Taking the analyses represented by Tables 7.9 and 7.10 together, none of the deviations from simple proportions seems unusually high. It must be remembered that the number of managers in each column is small, which means that differences need to be considerable to be significant.

TABLE 7.10

CAUSES OF CONCERN BY MANAGERS OF DIFFERENT ATTITUDE TYPES

Number of causes of concern by managers described as:

Cluster F 'harassed optimists' (N=7)		Cluster G 'contented planners' (N=6)		Cluster H fatalists (N=2)		Total (N=15)	
no.	%	no.	%	no	%	no.	%
70	49	48	34	24	17	142	100

Another possible relationship was explored, this time with locus of control beliefs. In Section 7.4 those who completed the I-E scale were classified by their scores into three approximately equal groups. An analysis was carried out of the strategies employed by managers in each group, the results being shown in Table 7.11.

Analysis of this table shows that internals employed strategies broadly in line with the whole group. Externals, on the other hand, exhibited an interesting distribution of strategies. Their rate of use of communication strategies was the highest of the three groups; similarly they were the greatest users of corrective action strategies, although this is more than balanced by the very low figure against their use

TABLE 7.11

STRATEGIES EMPLOYED BY MANAGERS OF DIFFERENT LOCUS OF CONTROL BELIEFS

Number of strategies employed by managers
described as:

Strategy	Internal (1) (N=6)		Unclassified (N=5)		External (N=24)		Total (N=15)	
	no.	%	no.	%	no.	%	no.	%
Response	3	(2) 27 5	4	36.5 9	4	36.5 11	11	100 8
Corrective action	18	38 32	15	32 32	14	30 37	47	100 33
Planning action	19	44 34	16	37 35	8	19 21	43	100 31
Communication	16	41 29	11	28 24	12	31 31	39	100 28
Total	56	40 100	46	33 100	38	27 100	140	100 100

Note 1 : Classification is by additive score

2 : Upper figure is % of row
Lower figure is % of column

of planning action strategies. The fact that externals made less use than other groups of the positive strategies (corrective action and planning action) is consistent with the general description of the 'typical external'.

To complete this analysis, causes for concern were similarly analysed by different locus of control beliefs, the results being shown in Table 7.12. This table shows that internals

recorded almost exactly the same number of causes for concern as obstacles overcome. Externals, on the other hand, recorded 11.3 causes for concern per person compared with 9.5 obstacles overcome. One could argue that this difference was in line with the locus of control concept but the numbers are so small that conclusions of this sort cannot be safely drawn.

TABLE 7.12

CAUSES OF CONCERN BY MANAGERS OF DIFFERENT LOCUS OF CONTROL BELIEFS

Number of causes of concern by managers described as:

Internal (N=6)		Unclassified (N=5)		External (N=4)		Total (N=15)	
no.	%	no.	%	no.	%	no.	%
57	40	40	28	45	32	142	100

7.6.3 Discussion.

While the overall view of the analysis of the Obstacles Questionnaire leads to no significant relationships, this form of analysis offers promise. Although results have been set out in tabular form to assist the analysis, it is clear that numbers do not warrant conclusions being drawn. Nevertheless many responses, especially where these were elaborated in the interview, could be seen as very characteristic of the personality as revealed in other aspects of the study. It

should also be pointed out that during the ten interviews with respondents who had completed the Obstacles Questionnaire the opportunity was taken to offer counselling as part of the bargain with the respondents. it is now clear that this orientation of the discussion allowed opportunities to probe to be missed. Consequently some of the more puzzling features of the analysis remain unresolved.

One of the principal reasons why probing is advisable is that this is a self-report instrument, subject to a form of 'status protection' (see Burns, 1954). Unlike those questionnaires whose purpose is hidden from the respondent, the Obstacles Questionnaire is so explicit that respondents can easily interpret situations in ways which do not show themselves in a bad light. It was noticeable during the interviews that several respondents referred to bad management practices on the part of their seniors, apparently seeking to avoid blame themselves for bad time management. This may have been true in some cases but its truth may not have been tested. The positive attitude to shortcomings at senior level adopted by more than one respondent seems to have allowed them to overcome this obstacle. It is common tutorial experience to be told that 'it should be the boss, not me, on this course', but a good manager should be able to develop mechanisms to cope with an unfavourable environment. That having been said, due note should be taken of one comment: 'all three causes of

concern on List D [personal] are due directly to too much work' (Mr. Williams). This is significant where a person is forced by the work situation to behave in a way that is alien to his or her nature.

Finally it should be said that, as this is an instrument intended to give an indication of temporal behaviour, it needs to be validated against observation of actual behaviour, an opportunity which is beyond the scope of the present research.

7.7 SUMMARY OF THE STUDY

One of the reasons for conducting this integrative study was to reduce the possibility of environmental variables vitiating the results. As the study was conducted entirely with managers employed by one organisation there was a common background, with potential differences in value system and geography pertaining to different employers removed from consideration. This allows the results to be viewed with confidence that the managers who participated are comparable. The major feature of the selection of the participants is that they had all attended similar courses in general management, on which the subject of time management had been discussed. It is possible that the comments they were to make during interview had gained from their having already considered

questions similar to those in the questionnaires. Whether or not this is true, the views and statements made during the interviews have proved extremely valuable in adding to the understanding of the elements of the Time Questionnaire and their relationships with other dimensions.

Time Diaries. The results of the time diary analysis are not important in themselves, particularly as they were not obtained as a part of this research. During interviews, however, the clear differences between people in their attitude to time, as revealed when they were discussing the use of the time diary in connection with the course, was made manifest. Two such differences are demonstrated by the following comments:

May be if you're in Management Services you go into all this but if you're a chemist time is endless (Mr. Gamage, a former chemist).

On the course we worked in trios to discuss results and found that some of the people most opposed to keeping a diary were those who had most to gain (Mr. East).

I-E Scale. Questionnaires were scored by both the additive method suggested by Rotter (1966) and the weighted factor score method developed and recommended in Chapter 6. Several cases were discovered where a strong belief in one dimension of locus of control was hidden by the additive method. Comments made during interviews emphasised these hidden

beliefs, supporting the weighted factor score method for identifying internality or externality. Several participants during interview made clear that they themselves had changed in attitude, either recently because of influences which were job-related, or since their early adulthood because of growing maturity.

Time Questionnaire. Sample means for the five factors agreed substantially with those for the whole sample and many respondents during interview agreed with the interpretation of their scores. Comments made during interview not only provided insights into the meaning of the factors, but also pointed to possible improvements. The following are regarded as deficiencies in the factors as they stand:

- In factor Q (present-rootedness) it is difficult to interpret a negative score; a re-wording of existing questions or the addition of new questions could help in this direction.
- In factor R (personal harassment) it emerged that some who scored high did not in fact feel harassed; they simply perceived their situation as potentially harassing. Of the two interpretations it is clear that feeling harassed is the more relevant to attitude to time and the wording of the questions should be amended to

clarify this.

- In factor S (changeability) it may be valuable to distinguish between those who are ready to accept change and those who actively seek it; with the present wording it is also possible to score negatively with an attitude either of consistency or of resistance to change. This distinction should be removed.
- In factor T (relaxed style) a positive score could indicate either relaxed mastery or indifference; similarly a negative score could indicate tension or simply severe self-restraint.

The three characteristic attitudes described in Section 5.5 are rather difficult to distinguish by individual factor scores, the centres of the clusters being relatively close together. In spite of this, they seem to paint a surprisingly accurate picture of the general attitude to time as revealed in interview. Comparison between the two classifications showed that those in cluster F (harassed optimists) tended to be external on the I-E scale, while those in cluster G (contented planners) tended to be internals. It was difficult to assess any relationship with cluster H (fatalists) because only two participants were so classified. One would wish to see a greater distinction between the clusters for these three

characteristic attitudes to be useful as a typology. If the interpretation of the five factors on the TQ is improved by amending the questionnaire, it would be worth recalculating the cluster centres and checking again the powers of the classification to distinguish types

Obstacles Questionnaire. Interpretation of this questionnaire has to be regarded as an exploration, since this is the first time it has been administered to a group of managers. The structure used for assessing returns was a model involving four strategies for overcoming obstacles: response, corrective action, planning action and communication. Preferred strategies for the members of the three clusters were analysed but the resulting matrix showed no particularly strong relationships; this may be due in part to the small numbers of members of the clusters added to inexperience in classifying strategies. A better comparison seemed to be with internals and externals on the I-E scale; one result which might be expected was that externals seemed low on planning action and rather higher on the other three strategies.

Although this part of the study must be recorded as indeterminate, the instrument carries a promise of usefulness; the response evoked by the items on the questionnaire were much in keeping with the personality of the individuals. The model for classifying responses probably needs refinement to

make clear distinctions between the strategies. If this questionnaire is to be used for identifying or predicting temporal behaviour, the stated responses from individuals, which are in effect self-report behavioural units, need to be validated by observation of actual behaviour. Within the confines of the present study this was not practicable but a future programme of validation would prove useful.

General Comments. While it would have been gratifying to have had a good response to all stages of this study, it is normal in such studies for enthusiasm to wane over a period of many months. Particularly as the interviews proved so fruitful, it was regrettable that several of the managers who had completed all stages of questionnaires were not able to attend for interview.

It is pleasant to record that the relationship between the investigator and the local authority remained cordial throughout; it is understood that the report submitted at the conclusion is being used in conjunction with the planning of future courses. It is to the credit of Birmingham City Council that all managers who agreed to be interviewed appeared to accept the promise of non-attribution completely on trust; certainly the interviews were all very pleasant occasions, as well as providing priceless information.

CHAPTER EIGHT

CONCLUSIONS

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8.1 THE EMERGING PATTERN

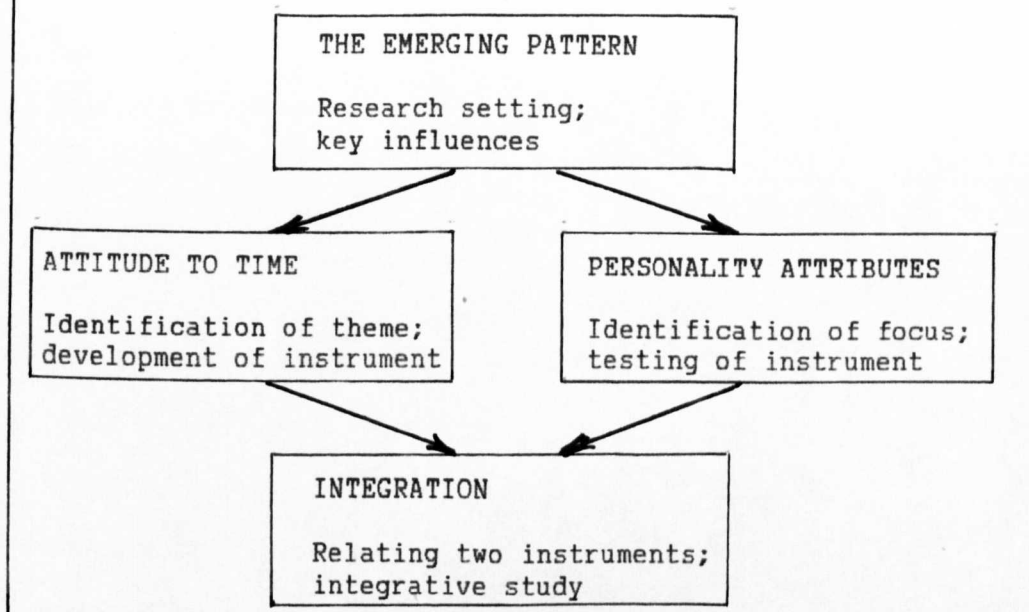
8.1.1 The Research Setting

The title of this research begins with the words, 'Explorations in managers' attitudes to time' and it is the function of this chapter to review the significant vistas in this journey of exploration, pointing to empirical data obtained and analysed, hypotheses drawn and tested, as they unfolded. At the conclusion of this journey this report is presented with a mixture of satisfaction in what has been discovered and humility because of what still remains to be done.

The ideas which stimulated this research led to exploration in an area where the research base is not well established - attitude to time - and the idea of linking this area with an established base in psychology led to the twin strands of this research. This chapter will review the findings within each strand before reporting on the ways in which the strands have been brought together. This is demonstrated in Figure 8.1

FIGURE 8.1

DIAGRAMMATIC REPRESENTATION OF THE CONCLUSIONS



Thus the pattern of the conclusion is a reflection of the structure of the thesis, which is shown in Figure 1.1.

The aims of the research were stated in Section 1.2. They are quoted again in the following sections to head the review of relevant conclusions. As stated in Section 1.1, these aims were formulated within a broader context in which these further aims might be explored:

- the identification of aspects of time management which might be related to attitude to time;
- the development of a self-learning theory or programme which

might help managers to form time management habits or practices which could help them more fully to achieve the work objectives which they thought important.

In consequence the ultimate objective of trying to help managers to find a way to improve their own time management performance is implicit in the development of this research.

An important feature of the research is the fact that the sample population consists of managers, unlike many of the reported psychological studies where the subjects are psychology students. The characteristics of this sample population have had considerable influence on the choice of methods, as was discussed in Section 4.3.2. The result has been extensive use of subjective techniques, which are particularly suitable for attitude measurement. To avoid too great a reliance on the use of questionnaires of the same type, the Obstacles Questionnaire invites free contribution from respondents and considerable weight was attached to interviews, particularly during the integrative study. Frequent use was made of unstructured interviews, in the form of informal discussions with other managers drawn from the same population as the subjects in the research; although the specific output of these interviews is difficult to demonstrate, they have had a formative influence on the present researcher. It is recognised that the desirable aim

of triangulation of methods employed has not been achieved but it is argued that a reasonable variety of the methods which satisfy the criteria set out above has been employed.

8.1.2 Key Influences

In retrospection it can now be seen that the researcher was considerably influenced in the early days of the present research by a few key studies and reviews. For example, two early studies of managers indicated ways of discovering what managers actually did; these were the studies by Horne and Lupton (1965) and Stewart (1967), and they were used as the model for the writer's first local government study (Austin, 1975). One of the questions raised by these studies was to what extent the activities reported were dictated by the nature of the managerial job, as discussed in the extensive study by Hemphill (1960) .

The Mintzberg (1973) analysis of managerial roles clarified the variables influencing managerial activity; environmental, job, person and situational variables are all worthy of examination and an early decision was which variable to study. It was the richness of individual variation which had emerged from the researcher's early studies and the discussions which followed them which led to the selection of person variables.

In searching for a range of meanings of time, the researcher was influenced by three great studies by Fraisse (1964), Doob (1971) and Fraser (1981) as well as by the Proceedings of the Conferences of the International Society for the Study of Time, edited by Fraser and others (1972, 1975, 1978, 1981).

Of the greatest help in surveying the field of personality were the works of Allport (1963), Harré (1976) and Forgas and Shulman (1979). Later influences were Mischel (1973) and Rotter and Hochreich (1975), who were largely responsible for the adoption of social learning theory as the area within which to find an instrument to reflect personality.

From these early influences developed the two strands of the research, which were conducted simultaneously and which are summarised in the following two sections.

8.2 ATTITUDE TO TIME

The first of the aims of this research has been stated as:

- to investigate ways of analysing managers' attitude to time and to establish and administer an instrument which allows individual managers' attitudes to be described quantitatively.

In this section a brief summary of the derivation of the instrument is followed by a description of the Time Questionnaire itself. After suggestions for further study are made, a suggested classification of managers is offered.

8.2.1 The Origin of the Studies

Whenever the question, 'What does time mean to you?' was asked during informal discussions at the inception of this research, the responses ranged from frustration that there was insufficient time available to do what had to be done, to satisfaction that time was being well managed. In almost all cases the responses bore on the management of time as a scarce resource.

It became clear that lay persons were unlikely to offer ideas which penetrated to the level of subconscious attitudes, so attention was turned to the emergent literature on the psychology of time. The question now was, 'In what way do individuals vary in their approach to time?' Doob (1971) envisaged stimulus, perception and judgment operating on an individual's temporal potential to function as a major influence on behaviour. Fraisse (1964) had earlier stated that experience and personality contributed to attitude, so a picture connecting experience, personality, attitude and behaviour was emerging.

Attitude, in the usage employed by Hoornaert (1973), was a narrow concept referring to attitude towards time zones, and as such was classed as a branch of the broader field of time perspective. Other sources, such as Knapp (1962) and Fraisse have used attitude to time in a much more general sense. It is in this broader sense that the word 'attitude' is used in this thesis.

8.2.2 The Wessman Temporal Experience Questionnaire

One of the earliest activities in this programme which was described in Section 5.1, was the conduct of a small number of interviews designed to capture the words and phrases associated with attitude to time as used by practising managers. A coding frame was constructed from the content analysis of the transcripts which was intended to be used in the design of a questionnaire or interview schedule. At that time a literature search revealed a study by Wessman (1973) on what he called 'the subjective experience of time'. In this study Wessman used very similar concepts to those which emerged from the content analysis of the pilot interviews, and it was decided to use the Wessman questionnaire as the basis for further investigation. The report in which Wessman supported his contention was described and evaluated in Section 2.3.4. His conclusions were conceptually satisfying

and closely relevant to the theme of the present research, so it was decided to build on his foundation.

Although the original purpose in administering the Temporal Experience Questionnaire (TEQ) to a number of managers was simply to explore the variations between the scores obtained by individuals, two tests were conducted as described in Section 5.2. The first of these tests compared the mean scores obtained by various groups to see whether differences were related to the subjects' jobs. No significant differences were found. This was in line with Wessman's own analysis, which concentrated on relating scores to individual differences as revealed by other psychological measures.

The second test sought to determine whether significant differences occurred between groups of local government managers, health service managers and the groups containing managers of mixed employment. Significant differences were found in six of the twelve factor scores tested, far more than would have been expected by chance. Originally there was no intention to test any hypothesis that managers from different sectors of employment might yield different results on the TEQ. However, the widely reported difference in value system between the public and private sectors would make such a hypothesis tenable logically. (For example, such comments were offered during the integrative study interviews and

during many informal discussions with the researcher). The results suggest that a systematic test of such a hypothesis would be worth conducting at a later date.

New Factor studies. In order to find whether the same factor structure as Wessman obtained with American students applied to British managers, the results were subjected to factor analysis, as described in Section 5.3. The results from the factor analysis showed a very different structure from that obtained by Wessman, so a new factor structure was sought. Two successive factorisations, rejecting those items which failed to meet statistical criteria, finally yielded a five-factor, fifteen-item structure. As was pointed out in Section 5.3.4, selection of fifteen retained items was based almost entirely on statistical grounds to avoid any subconscious support for any preconceptions which may have been entertained.

8.2.3 The Time Questionnaire Derived

The fifteen items which were retained after the second factorisation described above were rearranged randomly to form the new Time Questionnaire (TQ). The administration of this new instrument is described in Section 5.4. A further factor analysis confirmed the five-factor structure, factors being:

Factor P - Being organised;
Factor Q - Present-rootedness;
Factor R - Personal harassment;
Factor S - Changeability;
Factor T - Relaxed style.

The items themselves, their loadings on the factors, and the variances associated with each factor are shown in Table 5.10.

The TQ was administered as part of the integrative study and during the interviews individuals were invited to comment on their own attitudes as revealed by their scores. These comments, which were described in some detail in Section 7.5, added considerably to an understanding of the meaning of the factors.

It is believed that the TQ offers advantages over the Wessman TEQ for several reasons. In the first place the derivation of the TQ is statistically sound and the factors are pure; as discussed in Section 2.3.4 the derivation of the TEQ is less secure. In the second place, in spite of its brevity the TQ corresponds with the Wessman structure in three factors; Factor P (being organised) can claim to be a higher order than the nearest Wessman equivalent (time utilization) as Factor P contains a planning element as well, perhaps reflecting the

experience of the subject managers. Against this, Factor T (relaxed style) admits two possible interpretations, a fact which needs further examination.

Areas for further study. In general the interviews gave credibility to the factors, although they also raised doubts about the interpretation of some items. It is possible that some of these doubts are related to the fact that there are now only three items scoring on each factor. In other words, the search for factorial purity has made it more difficult to balance the contribution to a factor of different aspects of its central theme. It is proposed that this should be tested, possibly by constructing a questionnaire containing perhaps five items on each factor and comparing results with those discussed in this thesis.

In addition, the fact that the wording of the questions has remained unaltered from the Wessman original suggests that some of the benefits of Wessman's validity tests against other personality measures will accrue to the present questionnaire. Before the questionnaire can be used in predicting behaviour, however, it will need to be validated, a stage which the time scale of the present research programme precluded.

8.2.4 Three Characteristic Attitudes

Section 5.5. describes the process by which respondents to the TQ have been classified according to their scores on the five factors. By a clustering procedure three clusters were identified and respondents were attached to the nearest cluster, distances being measured in five-dimensional space to the centres of the clusters. The three clusters were:

Cluster F - harassed optimists;

Cluster G - contented planners;

Cluster H - fatalists.

The first two clusters, comprising the majority of cases, are reflections of one another; they depend principally on different scores on two factors. The minority cluster, cluster H, depends on unusual scores on two other factors.

It is contended that this cluster analysis lends support to the definition of the factors, although it is to be noted that the factor T (relaxed mastery) is not involved in the classification. As pointed out above, this factor is also subject to two different interpretations, as well as being the weakest statistically. As a matter for further study, once the content of the factors is either verified or amended in the light of further research, consideration should be given

to a four-factor solution.

8.2.5 Final Comments

The multi-faceted nature of time has been argued, for example, by Fraisse (1964) and Doob (1971) and classifications by such sources as Lehmann (1967), Hoornaert (1973) and De Volder (1979) serve to illustrate the complexity of the concept. It is natural to find a body of research based on any one of those facets, such as time perspective, linking it with personality attributes. From the viewpoint of this research, however, where the ultimate purpose is to increase understanding of approaches to time management, a single facet study appears somewhat limited.

The approach adopted has been therefore to find a multi-faceted measure of attitude to time. Relatively few investigators have adopted this approach, which is one reason why the Wessman (1973) study has been taken as a model. It is contended that the factor structure described in this thesis is more appropriate to British managers than the Wessman model. As this seems to be the first British study in which attitude to time among managers has been explored, it is hoped that the Time Questionnaire may be validated and, if necessary, improved. An understanding of the factors underlying attitude to time should be of assistance to

management development personnel and indeed to those managers who are interested in self-development.

8.3 PERSONALITY ATTRIBUTES

The second aim of this research, as set out in Section 1.2, is:

- to investigate different personality attributes which may influence attitude to time and to administer a selected instrument to a sample of managers.

In this section a brief review is given of the considerations which led to the selection of locus of control as the area for development. An account of the factor studies which led to a proposed two-factor solution is followed by a recommended improved manner of scoring results.

8.3.1 Selection of the Instrument

The search for an appropriate personality attribute to study further was guided by the underlying purpose of the whole project, which was stated in Section 1.1: 'trying to help managers to find a way to improve their own time management performance'. It was felt that managers would be more likely to respond to a theoretical explanation of the purpose of any

instrument if it could be linked to what they did rather than what they were like (Mischel, 1973). The tentative selection of social learning theory as an appropriate base was reinforced by the availability of a suitable instrument. Rotter's (1966) internal-external locus of control scale was finally selected as a simple but powerful questionnaire with a wide research base in the literature. The arguments were detailed in Section 3.3.

8.3.2 Locus of Control

Divergence of opinion has existed among investigators using the locus of control construct about whether, as Rotter had claimed, the internal-external locus of control (I-E) scale was unidimensional. Although Rotter himself acknowledged that there were potential sub-scales embodied in the I-E scale, he claimed that their significance was not sufficiently high to justify a multidimensional solution. The weight of critical opinion since 1966, discussed in Section 3.5, has been in support of a multidimensional solution, although there has been no agreement on the correct number of factors to employ. It was decided to conduct factor studies using British managers as subjects to further the debate.

8.3.3 Factor Studies

Results obtained from administering the I-E scale were subjected to factor analysis, extracting first seven, and then two factors, as described in Section 6.2. On this two-factor solution it was found that all but six of the twenty-three items could be used for interpretation. The first factor, containing twelve items, was named 'general luck' and the second, containing five items, 'political control'.

The political control factor was in exact agreement with many other studies, including Mirels (1970), O'Brien and Kabanoff (1981), Parkes (1985, who called the factor 'control at the socio-political level') and Marsh and Richards (1987). The general luck factor was less in agreement with other studies, although eight items were shared with Parkes and all twelve items appeared in Marsh and Richards, divided between their factors 'general luck' and 'success via personal initiative'.

8.3.4 Scoring the Questionnaire

An issue in the scoring of questionnaires is the method used by investigators to discriminate between internals and externals. It is argued that to have a range of central scores unclassified is preferable to making a single score the dividing line. The practice which is recommended is the safe

one of dividing the respondents into three equal groups by their score and classifying only the extreme groups as internals or externals.

In the cited reports of studies on dimensionality there seems to be no reference to alternative methods of scoring. It is argued in Section 6.3.3 that the simple additive score is inadequate for a multidimensional solution. It is clear in the two-factor solution in the present case that an individual can have internal beliefs on the general luck factor with external beliefs on the political control factor, and vice versa, as the factors from a rotated analysis are orthogonal. It is also clear from the different loadings which items bear on the factors that their contribution to the meaning of the factors is different. Using weighted responses in assessing score on a factor allows for this and also includes those low-loading items which have not been used for interpretation.

An indication of the superiority of the weighted factor score over the simple additive score is described in Section 6.3.3. This test involved classifying respondents by both the additive and the weighted factor score methods; the weighted score method allowed a tendency to internality or externality on either factor separately to be identified.

Weighted factor scores were also used to test a hypothesis

that local government managers might be more external than their non-local government counterparts because of the closeness of their work to local politics. The fact that no significant differences were observed between the scores obtained by the two groups, each numbering about three hundred individuals, suggests that industry differences are not an influence in determining I-E scale scores. This is consistent with the general contention throughout this thesis that attitudes are governed more by person variables than by job, environmental or situational variables (see Mintzberg, 1973).

8.3.5 Final Comments

It is important to recognise that the I-E scale was developed within the framework of social learning theory. It follows that an individual's score on the scale at any one time is not an immutable characteristic of that individual. The interviews described in Section 7.4 included several instances of individuals being aware of a change in their belief about locus of control. In some cases this was due to maturation; in other cases the causes were unfortunate experiences or the success of goal-seeking career development, both demonstrating reinforcement theory.

Because the weighted factor score method has no established place in the literature, testing its validity must remain an

area for further study. Such a test could be conducted during any relationship study, interviews being held with any individuals whose classification by the two methods was different. Extreme differences would be found in only a minority of cases but it is believed that the use of weighted factor scores could reduce some of the error in such studies. Experience gained from administering the scale to many hundreds of managers suggests that it is a valuable indicator of one aspect of personality, but that it is not, and was never intended to be, a general personality determinant.

8.4 INTEGRATION

Conclusions relating to the two remaining aims of this research will be reviewed in this section. They are:

- (iii) to develop an instrument by which different approaches to time management can be described;
- (iv) to investigate possible relationships between the instruments described, particularly by an intensive study of a small sample of managers.

The first relationship to be summarised is the correlation study between the factors of the two major instruments discussed in Sections 8.2 and 8.3. The Obstacles

Questionnaire, which was designed for use in the integrative study, will next be reviewed and finally the relationships arising out of the integrative study.

8.4.1 Relationship between the TQ and the I-E Scale

More than two hundred managers completed both the TQ and the I-E scale during the factor studies of the two questionnaires. Section 6.3.4 gives the results of a correlation between the five factors of the TQ and the two factors of the I-E scale. Five relationships were significant at the 0.10 level, compared with the one which might occur by chance. The meanings of the principal correlations are:

- a high score on being organised corresponds with internality;
- a high score on present-rootedness (or a lack of hope for the future) corresponds with externality;
- a tendency for high scores on personal harassment corresponds with externality;
- a high score on relaxed style corresponds with externality on political control, suggesting perhaps that

indifference to social issues is the predominant influence.

The high degree of relationship between the two sets of factors is further evidence that the TQ is an instrument providing useful information, and also that the two dimensions of the I-E scale can be independently related to other scales.

8.4.2 The Obstacles Questionnaire

The origin of this questionnaire lay in the tutorial experience of the present writer; many managers have reported being unable to adopt a positive approach to time management because of a number of time problems which they faced. Many sources have stressed the importance which some managers attach to time problems, including Moore (1968) and Smith and Mackenzie (1981). The questionnaire, which is described in Section 7.2.3, is based on the idea that managers who identify certain time problems as obstacles to time management, and who also indicate any action they have taken to overcome them, would be saying something about their actual time management behaviour.

The range of possible actions is wide and analysis demands a system of classification. The model used during the integrative study nominated four strategies (response,

corrective action, planning action and communication) to determine whether the respondent showed a preference for instinctive reaction or thoughtful action and for personal or shared action.

No definitive results were reported from the integrative study but the form of analysis could be described as promising. Other classifying models could be compared with the one just described to obtain the model which gives the most useful information. The content of the instrument appears satisfactory as is the method of completion. No doubt greater experience in using the classifying model will allow an investigator to classify responses with confidence and accuracy. What still remains to be done is to relate use of strategies to actual behaviour, as the instrument is still subject to the same limitations as any other self-report instrument. If claimed responses show a good relationship with actual behaviour, the instrument becomes a useful tool in indicating preferred styles of behaviour.

8.4.3 The Integrative Study

The integrative study, which is described in detail in Chapter 7, was conducted with managers employed by Birmingham City Council who had all attended a general management course on which time management was discussed. The intentions were to

reduce the influence of environmental variables (see Mintzberg, 1973) and to ensure a common basic understanding. Three instruments were administered: the I-E scale, the TQ and finally the Obstacles Questionnaire. Certain of the participants were invited for interview where responses to the instruments could be further probed. Unfortunately the number of managers who participated fell during the study; from an initial population of eighty-eight the number of responses at the successive stages were respectively forty-five, thirty and fifteen, with fifteen managers being interviewed. The diagram in Figure 7.1 shows the breakdown of participants in the various stages of the study.

The responses to the I-E scale and the TQ were analysed in the same way as responses from the whole sample and the results were found to be comparable (see the detailed reports in Sections 7.4 and 7.5). Those managers who were interviewed provided substantial support for the typical attitudes of internals and externals as described by Rotter (1966). Some comments suggested that beliefs about the locus of control were influenced by the job and were related to values and maturity. Comments about the TQ were particularly helpful in the added understanding they provided concerning the meanings of the factors.

Analysis of the responses to the Obstacles Questionnaire is

presented in Section 7.6 and a brief overview of the potential value of the instrument in Section 8.4.2. In the case of this questionnaire there are no data from the whole sample to enable comparisons to be made. Relationships with the other two instruments are briefly summarised in Section 8.4.4.

8.4.4 Relationships emerging from the Study

The fact that the integrative study was conducted with only a small number of managers means that relationships can be reviewed only in terms of general tendencies. Details of the results obtained have already been given and the function of this section is principally to summarise.

I-E scale with TQ. Those managers who were interviewed were also classified by their scores on the TQ into clusters and also by their scores on the I-E scales, as described in Section 7.5.7. The tendency for harassed optimists to be external in belief is consistent with the correlations reported in Section 6.3.4. A subjective impression gained at the interviews was that the description matched the personality well for half the group but there was doubt about the others. The strong connection found between contented planners and internality was also expected from the correlations and the description seemed to fit all members of this group well. Only one fatalist was interviewed and her

internality was more pronounced during the interview than her fatalism.

This comparison gives limited support to the clustering process.

Obstacles Questionnaire with I-E scales and TQ. Although differences can be observed between the strategies employed by managers classified under either questionnaire, it is difficult to identify significances. Detailed results are shown in Tables 7.9 and 7.11 and discussed in Section 7.6.2. Certainly some of the preferences for certain strategies are consistent with membership of one or other classification but inconsistencies also occur. Much larger numbers would be needed before any conclusions could be drawn.

8.5 SUMMARY OF CONCLUSIONS

Attitude to time. The Wessman Temporal Experience Questionnaire yielded dimensions which were so similar to those derived from content analysis of the first group of interviews that it was used as the first instrument. Analysis of results obtained did not support the structure obtained by Wessman and so a new questionnaire was derived from which five factors were obtained and interpreted. These factors express relevant and helpful dimensions of attitude to time.

A classification of managers according to their scores on the five factors of the Time Questionnaire is a convenient way of representing profiles in terms of these five facets of attitude to time.

Personality attributes. The appropriateness of social learning theory to the development of managerial skills led to the selection of Rotter's internal-external locus of control scale as the second instrument. Factor studies yielded a two-factor solution, in conflict with Rotter's claim of unidimensionality.

Normal scoring methods were found to give less definitive scores than weighted factor scores. It is claimed that the latter method of scoring allows better discrimination between internals and externals on the scale.

Integration. Significant correlations were found between the factors of the Time Questionnaire and the Locus of Control scale, supporting the dimensional view of both constructs.

The new Obstacles Questionnaire can be analysed in terms of strategies employed in overcoming obstacles. These strategies, while still self-reported, relate to actual temporal behaviour, which suggests the use of the instrument as a pointer to behavioural studies.

An integrative study within one host organisation allowed all three instruments to be administered and the concluding interviews yielded much supporting information to the questionnaire responses, as well as adding to the interpretation of the Time Questionnaire.

In the Time Questionnaire it is believed that a useful instrument has been developed which helps to analyse attitude to time along five dimensions. It is closely related to the Locus of Control scale when that scale is scored along two dimensions. When the Obstacles Questionnaire has been refined, it can be joined with the other two instruments to form a useful battery of tests to assess the relationship between attitude to time and time management behaviour.

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APPENDICES

APPENDIX 1.1

APPROACHES TO EFFECTIVENESS

The lack of clarity which exists in the usage of the word 'effectiveness' was referred to in Section 1.5.5. Some of the approaches to clarification and assessment of the concept are given here.

An emphasis on results achieved by individual managers was given by Reddin (1971):

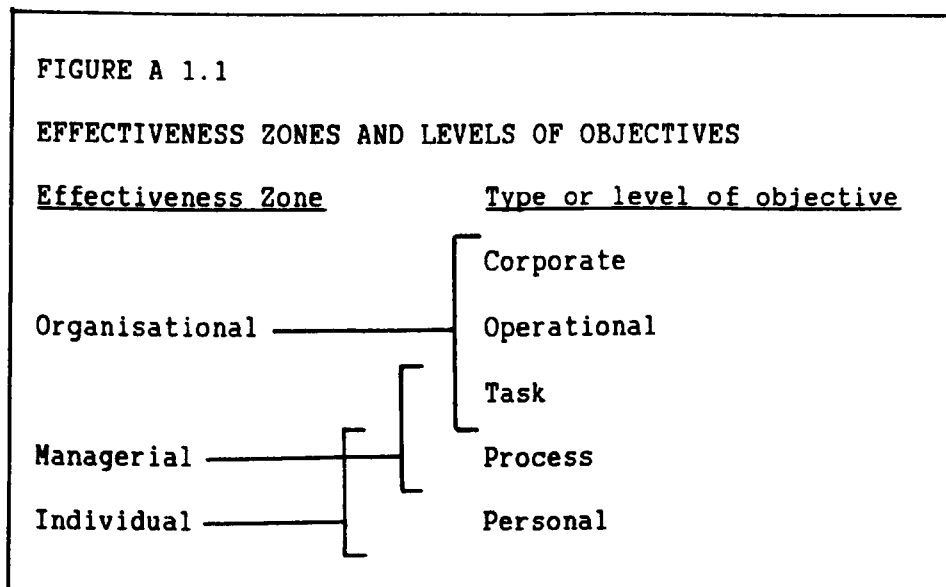
Effectiveness is the extent to which a manager achieves the output requirements of his position. It is the manager's job to be effective, it is his only job (p.3).

This referred particularly to the responsibility a manager owed to his organisation. A similar focus was given by Drucker (1974):

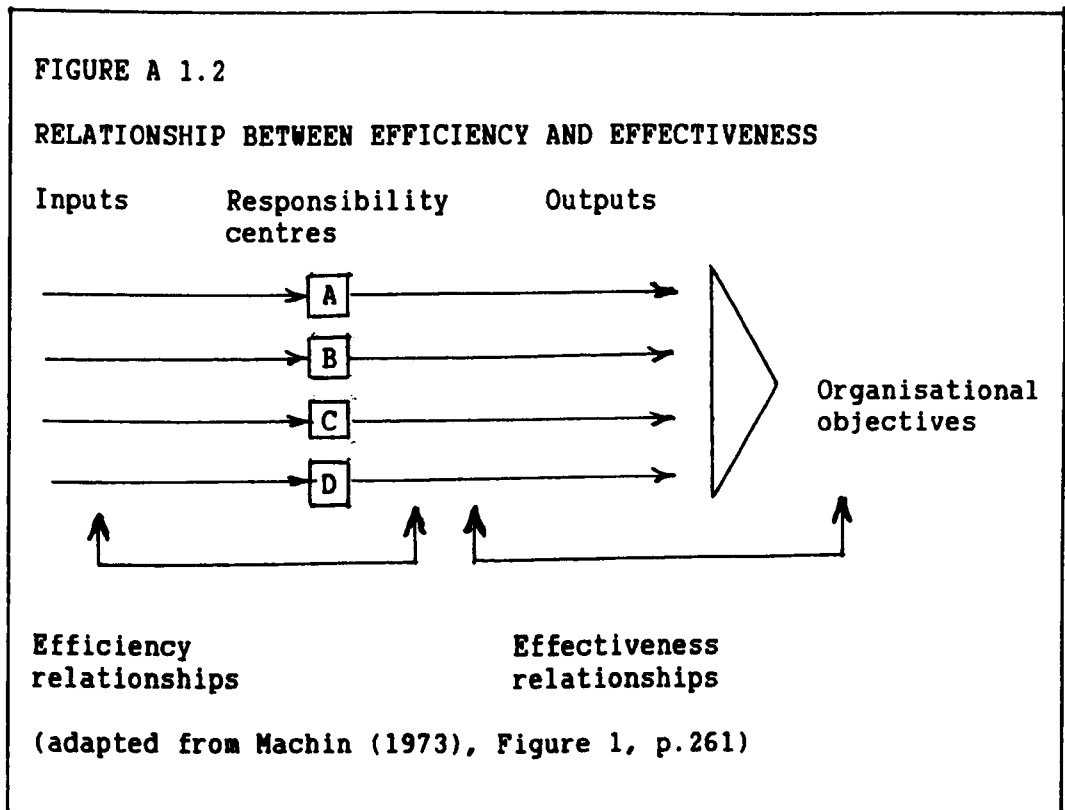
Even the healthiest business, the business with the greatest effectiveness, can well die of poor efficiency. But even the most efficient business cannot survive, let alone succeed, if it is efficient in doing the wrong things, that is, if it lacks effectiveness. No amount of efficiency could have enabled the manufacturer of buggy whips to survive. Effectiveness is the foundation of success - efficiency is the minimum condition for survival after success has been achieved. Effectiveness is doing the right things (p.45).

Reddin's 'output requirements' and Drucker's 'right things' imply objectives at several different levels for both individual managers

and their organisations. A useful framework for considering effectiveness at different levels was given by Bennett and Langford (1980). Figure A 1.1 is extracted from their Table 1.



Drucker used the term 'efficiency' in the sense of output per unit input; in his definition he implied that concentration on efficiency was concentration on operational and task level objectives at the expense of the wider, the longer term, view of corporate level objectives. What is clear is that neither efficiency nor effectiveness can be ignored. The simple model in Figure A 1.2 is another way of looking at the two concepts.



Using Reddin's definition literally can tempt one to the inference that it is output which matters at any cost.

As mentioned in Section 1.3.6, there are times when this is a praiseworthy attitude (as when human life is at risk) but normally a manager must achieve a possibly implied operational objective of economic use of resources. A useful review of the literature of managerial effectiveness is by Langford (1979).

Measurement. The measurement of managerial effectiveness poses a challenge to researchers in that criteria lack precision. One approach, by Stewart and Stewart (1976), arose from interest in determining managerial potential and owed much to work on appraisal.

Using the repertory grid technique Stewart and Stewart developed a number of questions which were held by the managers who collaborated in their programme to be directly relevant to effectiveness. These all related to actual behaviour, which the authors claimed to be the essential differentiation between effective and ineffective managers. They were able to claim after three years that their technique possessed reasonable predictive validity.

A project conducted in the Thames Valley Regional Management Centre was based on behavioural statements generated by the method of naturalistic descriptions. A pilot survey allowed those statements which proved confusing or ambiguous to be identified and omitted from the final selection of statements, which were then classified against a set of six dimensions or criteria for effectiveness. The resultant behaviourally anchored rating scales (BARS) were used in a study to compare scores with results of a standard company appraisal system and a high degree of correlation was achieved. This project was described at several stages, for example in Bennett and Brodie (1979) and Bennett and Langford (1979), and summarised in Bennett (1982).

These attempts to measure effectiveness are not without their critics who argue that effectiveness is so subjective that it defies measurement and that any measures seeking objectivity miss the point (see for example Johns, 1979). A different argument was put forward by Gilbert (1978) who also stressed the primacy of performance but

looked for a measure which he called 'potential for improving performance' (PIP). In any human activity, he argued, one can define 'exemplary performance' and the PIP is the ratio of actual performance to exemplary performance. The argument has its attraction and managers reading it may be helped to improve their own performance, but there is little empirical evidence that this approach can yield reproducible results. The present writer made several attempts to contact the author but even his publishers were not able to locate him.

One further study which deserves mention is the attempt to relate different personality attributes to success in an organisation (Ghiselli 1971). His sample was of 306 managers who were adjudged by a superior to be more/less successful managers. A simple inventory was used to obtain scores on thirteen traits which fell into three groups - abilities, personality traits and motivational traits.

These scores were checked against success and compared with similar results obtained from samples of line supervisors and line workers. Ghiselli concluded that the four major factors of managerial talent were two 'abilities' - a restrained and democratic leadership, and an effective and creative intelligence; one personality trait - faith in one's self; and one motivation trait - need for achievement. In a case study conducted over a period of twenty years he also found a high correlation between 'managerial talent' scores and success at different levels of management.

Objectives. The essential ingredient in effectiveness, whether it be for organisations or individuals, is the set of objectives to be attained. The setting in which organisational objectives are discussed is corporate planning. The presumption is that in any organisation there are sections or groups of individuals, each with its own sets of objectives and priorities. For the organisation as a whole the danger of parochialism needs to be avoided by some process in which the relative merits of the different sets of objectives from the wider viewpoint of the whole organisation are established.

There are many standard texts on corporate, or strategic, planning, such as Argenti (1968) and Ackoff (1970). A review of corporate planning as practised by British companies, commissioned by the British Institute of Management, was conducted by Hewkin and Kempner (1968). The rigidity of most formal approaches has been challenged by, for example, McCaskey (1974) who recommended a contingency approach. A standard text relevant to the local government sector is Eddison (1973), but the relevance of corporate planning to public corporations has been questioned by Chambers (1984).

It can be said that most of the arguments against the use of corporate planning are arguments against the form rather than the substance of the approach. There is a danger that the mass of procedural detail employed by some organisations may divert proper attention from its purpose. On the other hand, the danger of concentrating on task objectives to the detriment of broad strategy

can be even worse, as Drucker's example of the manufacturer of buggy whips suggests. An enlightened organisation constantly reviews long-term direction with the minimum of administrative machinery.

It is the application of the same principles to the individual, however, which are of more interest in this thesis and management by objectives (Mbo) has both benefitted and suffered from its elevation to the status of a 'movement'. The essential components of this approach are the precise identification and articulation of:

- key result areas (KRAs) , which are those functional areas (such as cost control, research, management development, quality assurance) in which the manager's performance is important;
- key tasks, which are the individual objectives, stated in terms of achievement rather than activity, within the KRAs which he or she undertakes to attain;
- success criteria or performance standards, which are the measures by which attainment of each key task can be assessed.

An essential feature of the application of the approach is that individual managers initiate the process by writing their own 'manager's guides', setting down precisely the key tasks and success criteria to which they are committed. These are agreed, after

modification if necessary, by the immediate superior, which is intended to ensure a joint commitment to their attainment. One of the merits claimed for the process is that its operation ensures regular discussion on progress between all managers and their superiors. At these meetings progress is monitored, corrective action is instituted where necessary and plans for the following period are agreed.

The standard text in Britain is Humble (1972), while an individualistic approach is that by Reddin (1971). In the United States, where the movement has also been strong, the principal texts are Odiorne (1965) and Morrissey (1970). A very useful review of applications and research which was current at the height of the movement's popularity is by Carroll and Tosi (1973). The application of MbO in the public sector has also been well documented, for example by Brady (1973), McConkey (1975) and Morrissey (1976). Amongst writers who are critical of the merits of MbO is Ford (1979) who suggests that the time for MbO has now gone.

The rationality of models such as those described is admirable but there are many difficulties in practice, such as ensuring that individual managers do in fact contribute to organisational objectives. The review meetings are supposed to ensure this but, even in these meetings, there is a danger that the discussion will travel along conventional lines. Sayles (1979) referred to contradiction between the rhetoric of thoughtful, objective decision-

making and the reality which shows complex interaction and deficiencies in the power structure. He concluded that relationships were the core of managerial work.

Expectations. An approach to management control which deserves mention is the expectations approach. In supporting the development of this approach Machin (1973) emphasised that the application of organisational objectives to different parts of an organisation demanded an amount of personal interpretation. Differences of interpretation between different managers could lead to conflict when mutual expectations did not synchronise. His criticism of MbO was that

. . . by reinforcing the superior-subordinate relationship and hence the vertical hierarchical elements in the structure of an organisation, [it] sometimes may actually erode the level of horizontal co-ordination and integration which an organisation needs to achieve (p.265).

The principle of the approach is that interacting managers enunciate precisely their expectations of one another, and then meet to resolve differences.

Machin and his colleagues at Durham University Business School have applied the approach in a number of organisations and have refined methods of recording to include computer-aided reports in order to reduce laborious paper-work. It is not suggested that the approach replaces the need for objective setting but that 'it could provide a

better basis for communicating job content information and focus on the existing state of interpersonal relationships in a given situation' (Machin, 1979, p.4).

APPENDIX 2.1

THE WESSMAN TEMPORAL EXPERIENCE QUESTIONNAIRE: DETAILS OF FACTORS

I. Immediate Time Pressure: Harassed Lack of Control vs. Adaptive Flexibility and Relaxed Mastery.

I. positive. Harassed Lack of Control.

1. to try to do several things at the same time, and go off in twenty directions at once.
9. to feel that I have insufficient time to accomplish everything that I must do.
17. to experience pressure to speed up, and have to do things faster than I am able.
25. to find after beginning a job that it is more difficult than I had imagined.
33. to think that I am able to work faster than I really can.
41. to feel overworked, weighed down by more tasks than I can possibly finish.
49. to feel as if many of my actions are self-defeating.
57. to over estimate the amount of work that I can do in a given amount of time.
65. to repeat time and time again mistakes that I have made before.
73. to run out of time with important things still to be said or done.

I. negative. Adaptive Flexibility and Relaxed Mastery.

5. to adapt easily to new and unfamiliar situations.
13. to keep myself free and ready to go wherever the future may lead.
21. to rely on my own experience in planning what to do next.
29. to organize my daily activities so that there is little confusion.
37. to put aside my work and relax when I feel like it.
45. to feel that life is generally orderly and predictable.
53. to change my tactics when necessary so that I can attain my goal.
61. to find that I generally have sufficient time to do the things I want.
69. to work steadily at my own pace.
77. to give my time generously to others.

II. Long-Term Personal Direction: Continuity and Steady Purpose vs. Discontinuity and Lack of Direction.

II. positive. Continuity and Steady Purpose.

- 2. to proceed in an orderly way towards goals set long in advance.
- 10. to feel strongly certain of who I am and where I am going.
- 18. to be aware of a sense of continuity in my life.
- 26. to plan much of my life around a few main goals.
- 34. to have my future well mapped out, the routes marked and the lights green.
- 42. to feel continuity between one year and the next.
- 50. to feel that my life is like a continuous thread, never cut till death.
- 58. to set goals for myself that will take months or years to reach.
- 66. to feel that others are patient with me.
- 74. to try to imagine the forms that Russia, Europe, India and the US may be evolving to.

II. negative. Discontinuity and Lack of Direction.

- 6. to feel as though I am stuck in a rut and unable to get out of it.
- 14. to feel that the future is an empty vacuum, sucking me in.
- 22. to go into the future like a lemming into the sea, not from choice but because I can't help it.
- 30. to feel my life is a series of fits and starts - stuck, moving, then stuck again.
- 38. to keep my future open and uncommitted.
- 46. to shy away from long-term responsibilities.
- 54. to feel that life has no rhyme or reason.
- 62. to think of the future as empty, hollow, and dark.
- 70. to disregard the future and just take things as they come.
- 78. to feel that time is broken, chopped-up, and without direction.

III. Time Utilization: Efficient Scheduling vs. Procrastination and Inefficiency.

III. positive. Effective Scheduling.

- 3. to work fast and efficiently according to schedule.
- 11. to apportion my time so that I can manage each day to do everything I want.
- 19. to plan and schedule time far in advance.
- 27. to overestimate the amount of time that I need to do my work.

- 35. to meet self-set deadlines by beginning and finishing tasks at the prearranged times.
- 43. to fix one objective firmly in mind and aim toward it without deviation.
- 51. to schedule my activities several days or weeks in advance.
- 59. to think out and plan the most efficient way to use my time.
- 67. to set right to work at the jobs that have to be done.
- 75. to finish my work well before the deadline.

III. negative. Procrastination and Inefficiency.

- 7. to procrastinate so long that a great deal of work must be crowded into a short space of time.
- 15. to work below my capacity, and do less than I could.
- 23. to waste lots of time before I finally settle down to business.
- 31. to be late in almost everything I do.
- 39. to take my time in everything I do.
- 47. to work toward first one goal and then another without ever focusing on any particular one.
- 55. to be unsystematic in my daily life.
- 63. to be ready for anything, prepared for nothing.
- 71. to drift from thing to thing, with no particular plan in mind.
- 79. to never begin or finish a task on time.

IV Personal Inconsistency. Inconsistency and Changeability vs. Consistency and Dependability.

IV positive. Inconsistency and Changeability.

- 4. to regret immediately things I have just said and done, and wish that I could take them back.
- 12. to be rather fickle in my affections.
- 20. to find that my likes and dislikes change frequently.
- 28. to be quick to discard familiar, time-worn things like books, clothing, cars, in favor of new or different ones.
- 36. to find that my ideas and feelings have altered greatly.
- 44. to tire of the familiar and seek new sensations and experiences.
- 52. to find that I have acted in a way that surprised both myself and others.
- 60. to make changes for the sake of finding something new and different.
- 68. to change my mind frequently.
- 76. to find it difficult to stick to any one course of

action.

IV negative. Consistency and Dependability.

- 8. to react to familiar situations as I have always reacted in the past.
- 16. to feel that I know myself well.
- 24. to be consistent and dependable in my dealings with others.
- 32. to be guided in my conduct by certain principles which I have accepted.
- 40. to be patient with others and tolerant of their different ways of working.
- 48. to seldom make the same mistake twice.
- 56. to do things in a consistent fashion.
- 64. to feel and act pretty much the same from day-to-day, week-to-week, and year-to-year.
- 72. to hold on to the old familiar things in my life, and stick with the tried and true.
- 80. to stick to commitments that I have made.

APPENDIX 3.1

JOB DEMANDS STUDY

The stimulus for this particular study was the work described by Stewart (1976) which used the demands-constraints-choices model. Two of the questions posed by Stewart formed the starting point; they were:

1. What demands does a job make on the manager's behaviour, that is, what does he have to do, apart from the technical aspects of his work?
2. How do these demands vary in different jobs?

The method used for data collection was application of a simple questionnaire, an abridgement of that used by Stewart (p.126), to groups of managers of senior or middle-management status, from a wide range of jobs, employers and industries. The questionnaire asked subjects to describe their jobs so that they could be classified.

The classification used was in terms of three variables:

1. industry type, allowing for manufacturing industry, commerce, health service and local government;

2. size of organisation, according to the number of people employed;
3. occupation, using the Directory of Occupational Titles (CODOT) of the Department of Employment.

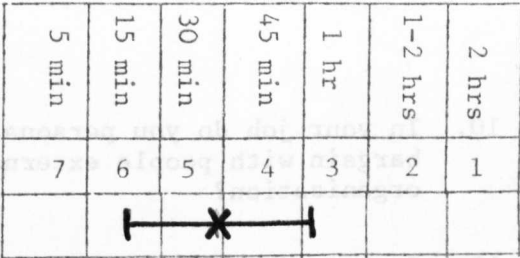
The reason for the choice of the CODOT classification was that it allowed for jobs to be analysed by specific job or by groups in any desired degree of generality.

A summary of the questionnaire returns is shown in figure A 3.1.

FIGURE A 3.1

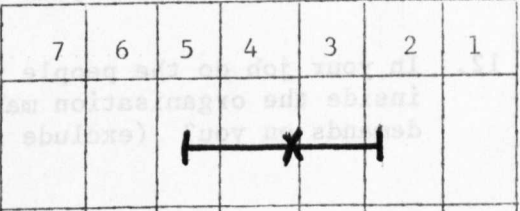
SUMMARY OF RESULTS OF JOB DEMANDS QUESTIONNAIRE

1. How often, on average, does your job require you to switch your attention from one subject, person or problem to another? (Include telephone) Every -

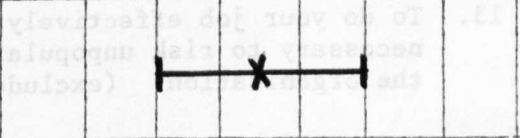


Always Never

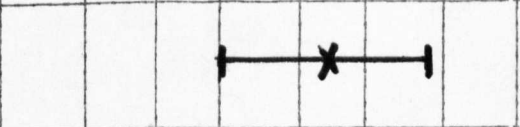
2. Does your job require sustained attention to one subject or problem for an hour or more at a time?



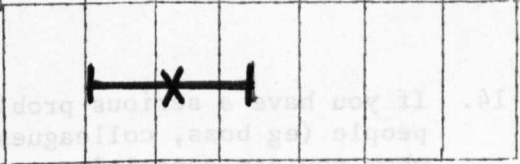
3. In your job do you personally have to work for definite time deadlines? (Not self-imposed deadlines)



4. Can you predict variations in the amount of your own inescapable work?



5. Does your job require you to respond to the problems, requests or instructions of others?



Note: Of the seventeen questions asked, only these five are related to time management. The ranges of results shown are the mean \pm 1 x standard deviation. n = 535.

Analysis

The whole sample was divided by individual jobs or related groups of jobs. The first stage of the analysis was to identify any groups (i.e. sub-samples of respondents with the same or related jobs) for which the mean differed substantially from the sample mean. Seven groups showed such differences in two or more questions:

General managers (n=19) showed more imposed deadlines but variations were more predictable.

Management services personnel (n=4) experienced more fragmentation but had less need for sustained attention.

Land and property personnel (n=11) experienced less fragmentation and had more need for sustained attention.

Housing managers (n=17) experienced less fragmentation but had more imposed deadlines.

Senior nurse managers (n=12) experienced less fragmentation but had more need for sustained attention.

Private sector administration managers (n=4) had more need for sustained attention, could predict variation less, but needed to be less responsive.

Public sector industrial managers (n=26) showed high need for responsiveness but also high need for sustained attention.

At the same time it was noticed that some groups were very cohesive in their responses to certain questions, showing a low standard deviation. This was observed for management services personnel's need for sustained attention, senior nurse managers' need for responsiveness and middle nurse managers' fragmentation. A very low standard deviation (0.5) was observed for fragmentation for both land and property personnel and housing managers and also in the private administration managers' need for responsiveness.

The next stage in the analysis was to search for significant differences or similarities between pairs of groups. The researcher admitted to certain preconceptions in this respect but selection of most pairs followed inspection of the responses in statistical terms. Nineteen pairs in all were selected for examination and the comparison was by t-test. Using 2-tail probabilities, most of the pairs showed at least one question with significant similarity ($p \geq 0.95$) or significant difference ($p \leq 0.05$), although few pairs corresponded in more than one question. In the comparison which follows, attention has been drawn also to 'fairly significant' similarities ($p \geq 0.90$) and differences ($p \leq 0.10$).

To enhance the meaning of the comparisons, the pairs will now be considered together with other pairs paired on the same basis:

Pairing within the same/similar function

General managers and administrators showed significant differences in imposed deadlines and predictable variations. These differences might be expected as a result of the difference in seniority.

Housing managers and housing executives showed significantly similar need for sustained attention but differed significantly in fragmentation and imposed deadlines. All of these results reflected differences and similarities which might be expected as a result of different seniority.

Nursing senior and middle managers showed only one fairly significant difference in fragmentation. A greater contrast might have been expected.

Production and maintenance managers showed significant similarity in need for sustained attention and fairly significant similarity in fragmentation and predictable variations. They differed fairly significantly in imposed deadlines.

Production and construction managers showed significant difference in need for responsiveness, which would be expected.

Maintenance and construction managers differed significantly in imposed deadlines but showed fairly significant similarity in need for responsiveness.

Personnel and management services managers showed significantly different fragmentation and fairly significant difference in need for sustained attention.

Pairing between public sector and private sector

Accountants employed in the public and the private sector showed significant difference in need for responsiveness.

Industrial managers taken together similarly showed significant difference in need for responsiveness.

A comparison was also drawn between private and public sector administrators but no significant similarities or differences were found.

Pairing between large organisations and others

Industrial managers taken together showed fairly significant difference in fragmentation.

Administrators showed significant difference in imposed time deadlines and fairly significant difference in fragmentation.

Pairing between unlike groups

(Note: Selection of the pairs in this section was subjective. If certain aspects of the work carried out by any group seemed to the researcher to be particularly similar to, or different from, aspects in another group, the pair became a candidate for inclusion. No attempt was made systematically to compare all possible pairs as most of these would be inconclusive.)

Accountants and administrators were compared in the public sector only and showed significant difference in imposed deadlines and fairly significant difference in fragmentation.

Managers in research and development were compared with those in planning and architecture and showed no significant differences but a significant similarity in imposed deadlines, presumably reflecting characteristics of commercial/contract pressure.

Social work managers and housing managers showed significant difference in fragmentation.

Social work managers and senior nurse managers showed significant differences in three variables: fragmentation, predictable

variations and need for responsiveness, the social work managers being very close to the sample mean in all three variables.

Senior nurse managers and housing managers showed significant difference only in predictable variations.

Senior nurse managers and maintenance managers showed significant similarity in need for sustained attention but significant difference in need for responsiveness.

Housing managers and maintenance managers showed significant similarity in imposed deadlines.

Discussion

Analysis of these results is useful if it provides insights into those aspects of work which most discriminate between jobs. Accordingly the similarities reported above may be less interesting than the differences, which will now be discussed under each of the questions.

Fragmentation differences in some cases were what were expected: more fragmentation for housing managers than housing executives; more for personnel than for management services; more for social work managers than for housing managers or senior nurse managers, although the work of social work managers was not as fragmented as expected; slightly

more for administrators than for accountants in the public sector, perhaps because more of the sample were in frequent contact with the public or with elected members; slightly more for industrial managers in small organisations than for those in large organisations.

Need for sustained attention revealed many similarities but no significant differences; only for management services was the need slightly greater than for personnel.

Imposed deadlines showed differences in three pairings: more for administrators than for accountants in the public sector, perhaps in parallel with fragmentation; less for maintenance managers than for either production or construction managers, which was expected; less for administrators in small organisations than in large, an unexpected result which probably requires more analysis.

Predictable variations showed differences in only two pairings: less predictability for social work managers than for senior nurse managers, as expected; less for housing managers than for senior nurse managers, which again is probably to be expected.

Responsiveness also distinguished several pairings: more for private sector than for public sector accountants, probably because of the greater financial orientation of the private sector; more for production than for construction managers, as expected; more for senior nurse managers than for maintenance managers, as expected;

more for industrial managers in the public than in the private sector, probably because of the greater public accountability; less for social work managers than for senior nurse managers, which is a very surprising result, especially as the two group sizes were the same, eliminating a freak statistical paradox. This last question is worth pursuing with social work managers in other contexts because of the expected high degree of responsiveness throughout social work.

Conclusion

The job demands questionnaire contained seventeen questions of which only five have been analysed here. The usefulness of some of these five questions in distinguishing between the job demands of different jobs has been demonstrated, but there is also an unexplained variation in the returns from the whole sample. It is suggested that this supports the initial assumption that individual differences can be so great that they can considerably exceed those attached to job differences.

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers. In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

QUESTION	Tick choice
1a Children get into trouble because their parents punish them too much.	
1b The trouble with most children nowadays is that their parents are too easy with them.	
2a Many of the unhappy things in people's lives are partly due to bad luck.	
2b People's misfortunes result from the mistakes they make.	
3a One of the major reasons why we have wars is because people don't take enough interest in politics.	
3b There will always be wars, no matter how hard people try to prevent them.	
4a In the long run people get the respect they deserve in this world.	
4b Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.	
5a The idea that teachers are unfair to students is nonsense.	
5b Most students don't realize the extent to which their grades are influenced by accidental happenings.	
6a Without the right breaks one cannot be an effective leader.	
6b Capable people who fail to become leaders have not taken advantage of their opportunities.	
7a No matter how hard you try some people just don't like you.	
7b People who can't get others to like them don't understand how to get along with others.	
8a Heredity plays the major role in determining one's personality.	
8b It is one's experiences in life which determine what they're like.	
9a I have often found that what is going to happen will happen.	
9b Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.	
10a In the case of the well prepared student there is rarely if ever such a thing as an unfair test.	
10b Many times exam questions tend to be so unrelated to course work that studying is really useless.	
11a Becoming a success is a matter of hard work, luck has little or nothing to do with it.	
11b Getting a good job depends mainly on being in the right place at the right time.	
12a The average citizen can have an influence in government decisions.	
12b This world is run by the few people in power, and there is not much the little guy can do about it.	
13a When I make plans, I am almost certain that I can make them work.	
13b It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.	
14a There are certain people who are just no good.	
14b There is some good in everybody.	

FILLER

FILLER

FILLER

QUESTION	Tick Choice	
15a In my case getting what I want has little or nothing to do with luck.		
15b Many times we might just as well decide what to do by flipping a coin.		
16a Who gets to be the boss often depends on who was lucky enough to be in the right place first.		
16b Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.		
17a As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.		
17b By taking an active part in political and social affairs the people can control world events.		
18a Most people don't realize the extent to which their lives are controlled by accidental happenings.		
18b There really is no such thing as "luck".		
19a One should always be willing to admit mistakes.		FILLER
19b It is usually best to cover up one's mistakes.		
20a It is hard to know whether or not a person really likes you.		
20b How many friends you have depends upon how nice a person you are.		
21a In the long run the bad things that happen to us are balanced by the good ones.		
21b Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.		
22a With enough effort we can wipe out political corruption.		
22b It is difficult for people to have much control over the things politicians do in office.		
23a Sometimes I can't understand how teachers arrive at the grades they give.		
23b There is a direct connection between how hard I study and the grades I get.		
24a A good leader expects people to decide for themselves what they should do.		
24b A good leader makes it clear to everybody what their jobs are.		FILLER
25a Many times I feel that I have little influence over the things that happen to me.		
25b It is impossible for me to believe that chance or luck plays an important role in my life.		
26a People are lonely because they don't try to be friendly.		
26b There's not much use in trying too hard to please people; if they like you, they like you.		
27a There is too much emphasis on athletics at school.		
27b Team sports are an excellent way to build character.		FILLER
28a What happens to me is my own doing.		
28b Sometimes I feel that I don't have enough control over the direction my life is taking.		
29a Most of the time I can't understand why politicians behave the way they do.		
29b In the long run the people are responsible for bad government on a national as well as on a local level.		

APPENDIX 5.1

CODING FRAME FOR CLASSIFYING COMMENTS

Code

The environment and the organisation

- 11 Economic situation
- 12 Professional traditions
- 13 Use of resources; effectiveness
- 14 Organisational climate

Sources of work demands

- 21 Councillors and the public
- 22 The boss and other seniors
- 23 Own staff and peers
- 24 Work procedures
- 25 The unusual - crises
- 26 Impact on private life

Attitudes and emotional responses

- 31 Attitude to work
- 32 Attitude to leisure
- 33 Positive emotions (e.g. acceptance, enthusiasm)
- 34 Negative emotions (e.g. irritation, frustration)

Behaviour - management of others

- 41 Supervision; relationships
- 42 Delegation and monitoring
- 43 Training and development

Behaviour - self-management

- 51 Pattern of work
- 52 Using time diaries
- 53 Using planners, desk diary etc.
- 54 Self-discipline
- 55 Career development

TIME EXPERIENCE QUESTIONNAIRE

NAME _____ JOB _____ KIND OF WORK UNIT _____

There is a scale at the side of the following statements. Please indicate the degree to which you are characteristically disposed (+1, +2, +3) or not characteristically disposed (-1, -2, -3) to act and feel in the way indicated by the statement.

I am characteristically -

not disposed

disposed

	-3	-2	-1	0	+1	+2	+3
1. to try to do several things at the same time, and go off in 20 different directions at once.							
2. to proceed in an orderly way toward goals set long in advance.							
3. to work fast and efficiently according to schedule.							
4. to regret immediately things I have just said and done, and wish that I could take them back.							
5. to adapt easily to new and unfamiliar situations.							
6. to feel as though I am stuck in a rut and unable to get out of it.							
7. to procrastinate so long that a great deal of work must be crowded into a short space of time.							
8. to react to familiar situations as I have always reacted in the past.							
9. to feel that I have insufficient time to accomplish everything that I must do.							
10. to feel strongly certain of who I am and where I am going.							
11. to apportion my time so that I can manage each day to do everything I want.							
12. to be rather fickle in my affections.							
13. to keep myself free and ready to go wherever the future may lead.							
14. to feel that the future is an empty vacuum, sucking me in.							
15. to work below my capacity, and do less than I could.							
16. to feel that I know myself well.							
17. to experience pressure to speed up, and have to do things faster than I am able.							
18. to be aware of a sense of continuity in my life							
19. to plan and schedule time far in advance.							

I am characteristically -

not disposed

disposed

-3 -2 -1 0 +1 +2 +3

20. to find that my likes and dislikes change frequently.
21. to rely on my own experience in planning what to do next.
22. to go into the future like a lemming into the sea, not from choice but because I can't help it.
23. to waste lots of time before I finally settle down to business.
24. to be consistent and dependable in my dealings with others
25. to find after beginning a job that it is more difficult than I had imagined.
26. to plan much of my life around a few main goals.
27. to overestimate the amount of time that I need to do my work.
28. to be quick to discard familiar, time-worn things like books, clothing, cars, in favor of new or different ones.
29. to organize my daily activities so that there is little confusion.
30. to feel my life is a series of fits and starts - stuck, moving, then stuck again.
31. to be late in almost everything I do.
32. to be guided in my conduct by certain principles which I have accepted.
33. to think that I am able to work faster than I really can.
34. to have my future well mapped out, the routes marked and the lights green.
35. to meet self-set deadlines by beginning and finishing tasks at the prearranged times.
36. to find that my ideas and feelings have altered greatly.
37. to put aside my work and relax when I feel like it.
38. to keep my future open and uncommitted.
39. to take my time in everything I do.
40. to be patient with others and tolerant of their

I am characteristically -

not disposed

disposed

41. to feel overworked, weighed down by more tasks than I can possibly finish.
42. to feel continuity between one year and the next.
43. to fix one objective firmly in mind and aim toward it without deviation.
44. to tire of the familiar and seek new sensations and experiences.
45. to feel that life is generally orderly and predictable.
46. to shy away from long-term responsibilities.
47. to work toward first one goal and then another without ever focusing on any particular one.
48. to seldom make the same mistake twice.
49. to feel as if many of my actions are self-defeating.
50. to feel that my life is like a continuous thread, never cut till death.
51. to schedule my activities several days or weeks in advance.
52. to find that I have acted in a way that surprised both myself and others.
53. to change my tactics when necessary so that I can attain my goal.
54. to feel that life has no rhyme or reason.
55. to be unsystematic in my daily life.
56. to do things in a consistent fashion.
57. to over estimate the amount of work that I can do in a given amount of time.
58. to set goals for myself that will take months or years to reach.
59. to think out and plan the most efficient way to use my time.
60. to make changes for the sake of finding something new and different.
61. to find that I generally have sufficient time to do the things I want.

[illegible]

I am characteristically -

not disposed

disposed

	-3	-2	-1	0	+1	+2	+3
62. to think of the future as empty, hollow, and dark.							
63. to be ready for anything, prepared for nothing.							
64. to feel and act pretty much the same from day-to-day, week-to-week, and year-to-year.							
65. to repeat time and time again mistakes that I have made before.							
66. to feel that others are patient with me.							
67. to set right to work at the jobs that have to be done.							
68. to change my mind frequently.							
69. to work steadily at my own pace.							
70. to disregard the future and just take things as they come.							
71. to drift from thing to thing, with no particular plan in mind.							
72. to hold on to the old familiar things in my life, and stick with the tried and true.							
73. to run out of time with important things still to be said or done.							
74. to try to imagine the forms that Russia, Europe, India and the US may be evolving to.							
75. to finish my work well before the deadline.							
76. to find it difficult to stick to any one course of action.							
77. to give my time generously to others.							
78. to feel that time is broken, chopped-up, and without direction.							
79. to never begin or finish a task on time.							
80. to stick to commitments that I have made.							

APPENDIX 5.3 - ROTATED FACTOR MATRIX WITH SEVEN FACTORS

TEQ No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
1	.09	.21	.44	.29	-.07	.25	.09
2	<u>.73</u>	.03	.00	.08	.10	-.15	-.07
3	.67	.03	.03	.10	-.09	.06	-.01
4	.05	.32	.20	.34	.13	.01	-.10
5	.53	.03	.20	.29	-.05	.36	.24
6	.19	<u>.60</u>	.03	.12	.16	-.09	-.01
7	-.08	.34	.41	.23	.20	.35	.00
8	.44	.18	.22	-.13	.26	.17	-.00
9	.34	.24	<u>.60</u>	.14	-.04	-.10	.01
10	.68	.17	.09	.11	-.01	.27	.12
11	.67	.16	-.26	.01	-.15	-.03	.00
12	.01	.30	.18	.44	.06	-.03	.22
13	.35	.09	.16	.27	.07	.42	-.08
14	.04	<u>.72</u>	-.03	.13	-.10	-.09	.11
15	.01	.32	.11	.31	<u>.29</u>	.01	-.08
16	.67	.03	.18	.04	.03	.11	.12
17	.30	.13	<u>.63</u>	.09	-.01	.00	-.09
18	.67	-.12	.25	.07	.19	.14	.07
19	.67	-.08	-.02	.04	.02	-.18	-.16
20	-.00	.13	.19	<u>.52</u>	.02	.05	-.00
21	.64	.14	.24	.18	.06	.21	.05
22	-.04	<u>.55</u>	.18	.14	.13	.04	.04
23	-.07	.29	.37	.19	.27	.38	-.05
24	<u>.78</u>	.15	.18	-.00	.10	.18	-.02
25	.23	.20	.21	.39	.24	-.06	.05
26	.61	.06	.02	.12	.09	.29	-.20
27	.24	.11	-.06	.17	<u>.48</u>	.01	.01
28	.16	-.02	.16	.31	.06	.19	.06
29	<u>.78</u>	-.02	-.11	.15	.16	-.27	.00
30	.01	<u>.61</u>	.16	.33	.12	.16	-.13
31	-.03	.14	<u>.47</u>	.16	.07	.17	.06
32	.69	.14	<u>.36</u>	-.01	.15	.02	-.00
33	.29	.05	<u>.61</u>	.26	-.03	.04	.01
34	.69	-.17	-.05	.02	.03	.01	-.28
35	<u>.74</u>	-.02	-.20	.14	-.17	.05	-.07
36	.26	.13	.11	<u>.64</u>	.05	-.01	.06
37	.35	.11	-.12	<u>.36</u>	<u>.47</u>	.22	-.03
38	.25	.30	.12	<u>.50</u>	.20	.14	.09
39	.22	.20	-.01	.25	<u>.48</u>	.07	.09
40	.55	.01	.02	.13	.26	.09	.21

41	.24	.29	<u>.62</u>	.08	-.07	-.03	-.08
42	.67	.03	<u>.18</u>	.01	.19	.07	-.03
43	.58	.09	-.03	.12	.03	.15	-.31
44	.25	.28	.09	<u>.46</u>	.09	.24	-.08
45	.54	.14	.10	-.12	<u>.28</u>	.01	-.01
46	-.07	.28	.24	<u>.48</u>	.24	-.12	-.04
47	.06	.27	.33	.29	.27	.26	.11
48	.45	.01	.20	.12	.12	.12	.12
49	.07	.46	.20	.29	.16	-.07	.09
50	.43	.04	.26	-.02	.20	.15	.01
51	.67	-.10	.09	.10	-.01	-.21	.03
52	.22	.28	.11	<u>.51</u>	-.04	.07	.02
53	.70	.02	.21	.35	.04	.14	.09
54	.02	<u>.64</u>	.02	.24	.12	.01	-.37
55	-.15	<u>.40</u>	.32	.32	.07	.35	.07
56	<u>.80</u>	.07	.23	-.16	.13	-.07	.08
57	.28	.05	<u>.62</u>	.28	.07	.07	.06
58	.53	.01	.19	.16	-.01	.06	-.31
59	<u>.73</u>	-.09	.05	.13	-.01	-.23	.04
60	.22	.20	.03	<u>.53</u>	-.06	.13	-.10
61	.51	.23	-.42	.11	.22	.05	.03
62	-.04	<u>.68</u>	.06	-.01	-.03	.04	-.15
63	.16	<u>.36</u>	.29	.29	.02	.32	.22
64	.39	.35	.20	-.25	<u>.37</u>	.21	-.04
65	-.10	<u>.63</u>	.17	.19	.05	.10	.00
66	.53	.03	.14	.30	.20	.03	.14
67	<u>.76</u>	-.17	.09	.18	-.05	-.02	.01
68	.00	.25	.23	<u>.59</u>	.02	.03	-.06
69	.59	.13	.03	-.00	<u>.40</u>	-.04	.01
70	.03	.47	.10	.37	.18	.11	.38
71	-.16	<u>.63</u>	.14	.27	.12	.23	.26
72	.35	.26	.24	-.09	<u>.38</u>	-.07	-.11
73	.06	.30	<u>.61</u>	.38	.08	.02	.01
74	.32	.16	.00	.27	.01	-.10	-.07
75	.62	.09	-.26	.20	.06	-.22	.03
76	.00	.50	.43	.33	.02	-.03	.20
77	.46	.12	.27	.14	.04	.18	.25
78	.12	.51	.23	.16	.06	.11	.09
79	-.16	.41	<u>.50</u>	.20	.13	.22	.03
80	<u>.84</u>	.02	.11	.05	.11	.11	.07

NOTE: Underlined items were selected to construct a five-factor, forty-item set.

APPENDIX 5.4 - ROTATED FACTOR MATRIX WITH FIVE FACTORS

TEQ No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
2	-.10	<u>.54</u>	-.20	-.08	.06
6	<u>.56</u>	-.02	-.01	-.02	.12
9	<u>.13</u>	.04	.04	<u>.57</u>	-.17
14	.65	-.05	.07	.00	-.05
15	.30	-.14	.10	.14	.34
17	.03	.01	-.01	<u>.59</u>	-.17
20	.04	-.17	.50	.13	.03
22	.48	-.22	.06	.13	.09
24	-.06	.39	-.36	-.03	-.04
27	-.01	-.00	-.02	-.17	<u>.39</u>
29	-.07	<u>.76</u>	-.09	-.14	.14
30	.60	-.23	.21	.12	.14
31	-.01	-.31	.03	.43	.06
33	-.15	-.08	.11	<u>.54</u>	-.09
35	-.10	.53	.07	-.39	-.22
36	.09	.11	<u>.59</u>	.09	.15
37	.01	.01	.13	-.27	<u>.51</u>
38	.20	-.05	.35	.03	.24
39	.07	-.05	-.01	-.07	<u>.49</u>
41	.22	-.03	-.01	.62	-.21
44	.23	-.14	.34	-.05	.11
45	-.00	.16	-.41	-.05	.08
46	.23	-.13	.29	.31	.33
52	.15	-.08	<u>.52</u>	.04	-.03
54	<u>.69</u>	-.07	.15	.02	.13
56	-.14	.44	-.47	.06	-.11
57	-.15	-.20	.06	.54	.01
59	-.21	<u>.50</u>	-.01	-.02	-.05
60	.17	.00	<u>.46</u>	.04	.11
62	<u>.65</u>	.18	-.01	-.01	-.11
64	.23	-.05	-.53	-.01	.10
65	.54	-.37	.15	.03	-.03
67	-.37	.51	-.02	-.09	-.19
68	.23	-.18	.54	.15	.08
69	.02	.35	-.33	-.07	.29
71	.49	-.47	.15	.04	.13
72	.17	.04	-.37	.10	.16
73	.19	-.24	.20	.59	.11
79	.21	-.56	.05	.40	.11
80	-.24	.47	-.22	-.08	-.05

NOTE: Underlined items were selected to construct a five-factor, fifteen-item set.

TIME QUESTIONNAIRE

NAME _____ JOB _____ KIND OF WORK UNIT _____

There is a scale at the side of the following statements. Please indicate the degree to which you are characteristically disposed (+1, +2, +3) or not characteristically disposed (-1, -2, -3) to act and feel in the way indicated by the statement.

I am characteristically - not disposed disposed

	TEQ No.	-3	-2	-1	0	+1	+2	+3
1. to take my time in everything I do.	39							
2. to find that my ideas and feelings have altered greatly.	36							
3. to feel as though I am stuck in a rut and unable to get out of it.	6							
4. to think of the future as empty, hollow, and dark.	62							
5. to feel that I have insufficient time to accomplish everything that I must do.	9							
6. to experience pressure to speed up, and have to do things faster than I am able.	17							
7. to organize my daily activities so that there is little confusion.	29							
8. to feel that life has no rhyme or reason.	54							
9. to think that I am able to work faster than I really can.	33							
10. to think out and plan the most efficient way to use my time.	59							
11. to make changes for the sake of finding something new and different.	60							
12. to put aside my work and relax when I feel like it.	37							
13. to overestimate the amount of time that I need to do my work.	27							
14. to proceed in an orderly way toward goals set long in advance.	2							
15. to find that I have acted in a way that surprised both myself and others.	52							

TIME QUESTIONNAIRE - INTERPRETATION

How we feel about time and what personal characteristics we bring to its use are complex questions. This questionnaire, which is condensed from its much longer original form, explores a variety of impressions, attitudes and propensities. Its present form allows five independent themes to be identified and your answers to the questions provide a score on each of these themes, or factors.

As is the case with most questionnaires of this type, there is no ideal score on a factor, just as there is no one right answer to a question. Comparison with typical scores does not therefore form a judgement, but simply allows you to reflect on the similarity of your responses to those of other people doing a broadly similar managerial job to your own.

For each factor a range is shown which covers approximately two out of every three people; a score above or below the range is therefore likely to be obtained by only one person in six. The descriptions given refer to very high scores. If your own score lies above the range, this suggests that you have a tendency to think, feel or behave in the way described.

Having an awareness of time and its significance as a resource is a step towards managing it effectively. In the same way increasing our understanding of the way we think about time, often quite unconsciously, may help us to use it better.

TIME QUESTIONNAIRE - SCORE SUMMARY

	<u>Range</u>	<u>Your score</u>
<u>Factor A - Philosophy of life</u>		
A high score suggests a fatalistic attitude, maybe even hopelessness, with little expectation that things will get better.	0.4 - 1.6	
<u>Factor B - Being organised</u>		
Scoring high on this factor indicates confidence in your own ability to remain on top of your job.	2.5 - 3.9	
<u>Factor C - Inconsistency</u>		
Having recently changed your job to one with many new challenges could explain a high score; otherwise you could be creative, or developing yourself, or just easily swayed.	0.9 - 2.0	
<u>Factor D - Personal harassment</u>		
With a high score here you probably feel you have to run just to keep still, possibly because of the expectations of others but maybe because you take on more than you can handle.	1.2 - 2.5	
<u>Factor E - Relaxed style</u>		
A high score could indicate great confidence in your ability to meet comfortably all demands which can be placed on you, or simply a belief that there is more to life than work.	1.2 - 3.1	

Notes: The range figures represent mean \pm standard deviation and include approximately two-thirds of cases; they were based on 339 cases. The factors are also listed in a different order from the final format.

APPENDIX 5.7TABLE FOR CONVERSION OF RAW SCORES TO NORMALISED SCORES

Item no.	Raw score	-3	-2	-1	0	1	2	3
1		-1.72	-1.08	-0.44	0.20	0.84	1.48	2.12
2		-2.26	-1.55	-0.84	-0.13	0.57	1.28	1.99
3		-1.13	-0.59	-0.04	0.50	1.04	1.59	2.13
4		-0.67	0.07	0.80	1.54	2.27	3.01	3.74
5		-2.24	-1.65	-1.05	-0.46	0.14	0.73	1.33
6		-1.94	-1.32	-0.69	-0.07	0.56	1.18	1.81
7		-2.51	-1.87	-1.22	-0.58	0.06	0.70	1.34
8		-0.79	-0.01	0.77	1.55	2.34	3.12	3.90
9		-1.79	-1.18	-0.58	0.03	0.64	1.24	1.85
10		-2.30	-1.68	-1.05	-0.43	0.20	0.83	1.45
11		-1.32	-0.72	-0.13	0.47	1.07	1.66	2.26
12		-1.62	-1.07	-0.51	0.04	0.60	1.16	1.71
13		-1.33	-0.63	0.07	0.77	1.47	2.17	2.87
14		-2.16	-1.54	-0.92	-0.30	0.32	0.94	1.57
15		-1.81	-1.13	-0.45	0.23	0.91	1.59	2.27

APPENDIX 5.8

FACTOR SCORE COEFFICIENT MATRIX

Multiply normalised item score by the following for factor:

TQ No.	P	Q	R	S	T
1	0.038	0.009	0.038	-0.099	0.342
2	0.011	-0.025	-0.029	0.285	-0.008
3	-0.007	0.187	0.006	-0.027	-0.021
4	0.117	0.637	0.013	0.035	0.048
5	0.001	-0.041	0.215	-0.048	0.029
6	0.077	-0.050	0.671	0.086	0.021
7	0.374	0.005	0.013	0.009	-0.102
8	-0.022	0.217	-0.049	0.002	-0.048
9	-0.005	0.026	0.119	-0.002	-0.085
10	0.451	0.020	0.037	0.131	-0.094
11	-0.038	-0.009	-0.013	0.188	-0.144
12	-0.023	-0.043	-0.003	0.486	0.205
13	-0.012	0.021	-0.057	0.116	0.237
14	0.229	0.018	-0.014	-0.105	0.171
15	-0.004	-0.040	-0.018	0.365	0.121

APPENDIX 6.1ROTATED FACTOR MATRIX FOR TWO-FACTOR SOLUTION

Rotter Item No.	Loadings on	
	Factor 1	Factor 2
2	0.34	0.01
3	0.06	0.45
4	0.24	0.02
5	0.27	0.00
6	0.37	-0.09
7	0.27	0.11
9	0.41	0.09
10	0.23	0.09
11	0.48	0.22
12	0.11	0.56
13	0.34	0.09
15	0.46	0.05
16	0.38	0.15
17	0.12	0.64
18	0.46	0.19
20	0.25	0.10
21	0.32	0.03
22	0.05	0.62
23	0.35	0.05
25	0.58	0.11
26	0.23	0.11
28	0.46	0.07
29	0.08	0.41

APPENDIX 6.2

FACTOR SCORE COEFFICIENTS FOR TWO-FACTOR SOLUTION

Rotter Item No.	Multiply normalised item score by the following for factor:	
	1	2
2	0.098	-0.026
3	-0.022	0.164
4	0.064	-0.014
5	0.074	-0.019
6	0.123	-0.060
7	0.072	0.013
9	0.115	0.003
10	0.059	0.007
11	0.151	0.043
12	-0.019	0.234
13	0.088	0.005
15	0.150	-0.034
16	0.101	0.017
17	-0.036	0.337
18	0.136	0.028
20	0.063	0.019
21	0.088	-0.016
22	-0.059	0.311
23	0.101	-0.007
25	0.220	-0.016
26	0.061	0.013
28	0.141	-0.020
29	-0.009	0.140

ACTIVITY RECORD

For details see page 14, Volume One

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[illegible]

Name

OBSTACLES TO TIME MANAGEMENT

When discussing time management and its relevance to them and to their jobs, managers often talk about obstacles or problems which stand in the way. The most commonly mentioned obstacles have been listed by several investigators and a combination of such lists forms the basis of this questionnaire.

You are invited to give some thought to those things which you personally think are (or have been) obstacles standing in the way of 'good time management'. Many of these will be regarded as part of the job; some of them (but by no means all) may be regarded as time wasters; some may be important, some unimportant to you. They appear in the questionnaire because some people have mentioned them as obstacles.

For the purpose of this questionnaire the definition of a time problem, or obstacle to time management, is:

something which prevents you from being as good a manager of your own time as you would like to be.

Each page of the questionnaire contains a list of time problems of a similar nature. You are asked to mark them in two ways -

if you believe you have overcome them, or consciously work in such a way that they are not problems to you;

if you believe they are still time problems to you.

In the case of problems overcome you are also asked to say what you have done, or what you now do, to overcome them.

Important note: There is no 'ideal standard response' to this questionnaire; it is not possible from this to rate or score you time management; it is not a question of success or failure. Your response simply reports on certain aspects of you and your job which are worth analysing.

PLEASE CHECK THAT YOU HAVE WORKED THROUGH ALL FOUR LISTS, AND HAVE ADDED YOUR NAME.

Finally, can you summarise in one short sentence, how satisfied you are with your time management in general?

LIST A

OBSTACLES TO TIME MANAGEMENT

Please read through this list of time problems and consider their relevance to you and your job. Please complete the questionnaire as follows:

1. select up to three problems which you have had to overcome (or which you consciously work to avoid) and mark them in the first column;
2. select up to three problems which still give you cause for concern and mark them in the second column;
3. for each of the problems overcome, write in a few words at the foot of the page what you do (or have done) to overcome or avoid it.

(NOTE: if you find two items which seem to describe the same problem, mark the one which is the better description of your problem.)

Ref	Problem/obstacle	Problems overcome	Cause for concern
A 1	Crises, emergencies	7	1
A 2	Deadlines	7	1
A 3	No time to think	2	4
A 4	Fragmentation/frequent change of activity	2	3
A 5	Waiting for decisions	4	4
A 6	Waiting for the boss	2	
A 7	Waiting for others		6
A 8	Too much job/overwhelming workload	4	2
A 9	Peaking workload	3	1
A10	Long jobs		1
A11	Too much detail	1	1
A12	Unclear objectives	3	2
A13	Other people's priorities		4
A14	Unrealistic expectations by others		3
A15	Changing priorities	1	3
A16	Snap decisions by others	1	3
A17	Other (specify)		
	Total	37	39

Problems overcome - steps taken to overcome problems marked -

Ref A... _____

Ref A... _____

Ref A... _____

LIST B

Please read through this list of time problems and complete the questionnaire in the same way as for List A.

Ref	Problem/obstacle	Problems overcome	Cause for concern
B 1	Open-plan office	1	5
B 2	Travelling	3	1
B 3	Responsibility without authority	1	3
B 4	Lack of procedures	2	1
B 5	Lack of standards	4	3
B 6	Poor organisation by others	3	6
B 7	Duplication of effort	2	
B 8	Being by-passed	3	2
B 9	Files lost/misfiled		3
B10	Machine breakdown		
B11	Staff shortage/absence	5	5
B12	Staff inadequate/over-dependent	3	2
B13	Subordinates' problems	1	2
B14	Training new staff	1	3
B15	Discipline/industrial relations	3	3
B16	Buck-passing/blaming others	2	
B17	Other (specify)		
Total		34	39

Problems overcome - steps taken to overcome problems marked -

Ref B... _____

Ref B... _____

Ref B... _____

LIST C

Please read through this list of time problems and complete the questionnaire in the same way as for List B.

Ref	Problem/obstacle	Problems overcome	Cause for concern
C 1	Information unavailable/ delayed/insufficient	3	5
C 2	Correspondence delays	1	3
C 3	Too much to read	4	2
C 4	Reports (to read or write)	2	2
C 5	Paperwork generally	1	2
C 6	Unavailability of others		2
C 7	Being too available	3	5
C 8	Over-participation in decisions	4	
C 9	Public/client queries/complaints	1	3
C10	Staff queries/complaints	1	
C11	Unplanned meetings	2	
C12	Ineffective meetings	3	5
C13	Interruptions	3	4
C14	Visitors	1	
C15	Phone	3	
C16	Socialising		
C17	Other (specify)		
Total		32	33

Problems overcome - steps taken to overcome problems marked -

Ref C... _____

Ref C... _____

Ref C... _____

LIST D

Please read through this list of time problems and complete the questionnaire in the same way as for List C.

Ref	Problem/obstacle	Problems overcome	Cause for concern
D 1	Inexperience	3	2
D 2	Being a perfectionist	3	1
D 3	Need to feel busy		1
D 4	Being a slow starter		1
D 5	Lack of self-discipline	2	
D 6	Unclear personal objectives		2
D 7	Poor personal planning	2	
D 8	Underestimating time needed	2	2
D 9	Attempting too much at once	7	2
D10	Over-involvement in issues	2	2
D11	Poor delegation/control	4	1
D12	Inability to say no	3	4
D13	Personal disorganisation		1
D14	Procrastination	1	2
D15	Indecisiveness	1	
D16	Over-hasty decisions		5
D17	Lack of concentration		3
D18	Leaving tasks unfinished	1	3
D19	Other (specify)		
	Total	31	32

Problems overcome - steps taken to overcome problems marked -

Ref D... -

Ref D...

Ref D...

APPENDIX 7.3

INTERVIEW SCHEDULE

A Attitude Questionnaire (show to S.)

Did you distinguish between questions about people and about self?
What influences have moulded your present attitude?

Is your attitude changing (with age/experience/other)?
What is the effect on you of environmental change (economic/
political/local government)?

B Time Questionnaire (show to S.)

What does time mean to you (work/non-work)?
What influences have moulded your present attitude?
Is this changing (with age/experience/other)?
In what way does your attitude affect your work?
How do you react to extreme people - over-organised/over-casual?

C Obstacles (show to S.)

Compare ways of handling with internal control and attitude to time.
Discuss ways of handling.

D Job

How much opportunity for choice do you have in your job?
Can it be enlarged?
Where do you want to be in 10 years?
What is needed to get there?

E Course

What are your principal memories of the course?
What aspects have you applied?
How does the course fit in with your 10-year plan?
Any suggestions for improvement?

F Time Diary

Have you used a time diary before? since?
What have you learnt from it?
How relevant was it to the course?



City of Birmingham

PERSONNEL DEPARTMENT
Snow Hill House
1 & 19 Barwick Street
Birmingham B3 2PF
Telephone 021-235 9944

Stephen J. Ward
City Personnel Officer

Mr. B. Austin,
Centre for Local Government Management,
Leicester Polytechnic,
PO Box 143
Leicester,
LE1 9BH.

your ref
our ref R/JD/T24/MH
date 18th June 1985
telephone calls to J. Doidge
direct line 021 235 3748

Dear Mr. Austin,

Time Management

Further to your telephone conversation with John Doidge, I am writing to clarify the arrangements for this project.

As agreed, I will be writing to participants in the last 5 General Management Courses (total of 88 - March 1984 to date) to invite their participation and co-operation in this. Our aim will be, via questionnaire/discussion, to gather more information on their use of time, attitudes and obstacles to effective use. The resultant information, which will be particularly relevant to Birmingham, will be useful to participants as a follow-up to previous work done but would also, in report form, be available to enhance the relevance of the current material we use.

In the first instance I will be assessing the interest in this and will subsequently issue the first questionnaire (Attitudes) to willing participants. I will send these results to you as they are returned but will in any event keep you informed of progress.

Yours sincerely,

M. J. Shepherd

Assistant City Personnel Officer

APPENDIX 7.5TIME DIARY RESULTS LYING OUTSIDE RANGE INDICATOR

n = 65	Range indicator (%)	Number of results above below range indicator	
<u>WHERE</u>			
own office	45-70	19	17
travelling	0-10	24	-
all other	25-45	12	21
<u>CONTACT</u>			
alone	30-45	22	6
with others	45-70	5	22
<u>WHO STARTED</u>			
self	45-70	28	5
others	20-55	5	21
<u>WHAT</u>			
letters, memos	10-20	16	25
other papers	35-65	8	19
no papers	15-40	23	7

APPENDIX 7.6SCORES ON THE I-E SCALE OBTAINED BY RESPONDENTS

Name	Additive method	Scores obtained by weighted factor score method	
		Factor 1	Factor 2
Mr. Anderson	2	-1.33	-1.08
Mr. Dennis	2	-1.22	-1.41
Mr. East	12	0.10	0.48
Ms. French	-	-	-
Mr. Gamage	9	-0.29	0.16
Mr. Gregory	19	1.83	0.65
Mr. Holt	12	0.27	0.71
Ms. Jenkins	8	-0.53	0.41
Mr. King	4	-0.36	-1.38
Mr. Maddock	15	1.15	0.39
Mr. Neaverson	10	1.14	-1.64
Mr. Pick	4	-0.87	-0.95
Mrs Raynor	8	-0.60	0.82
Mr. Weston	-	-	-
Mr. Williams	17	1.14	0.87

APPENDIX 7.7

RELATIONSHIP BETWEEN CLASSIFICATIONS ON I-E SCALE
AND TIME QUESTIONNAIRE

Cluster or type from TQ scores	No. of respondents classified on I-E scale as:			Total (1)
	Internal	Unclassified	External	
Cluster F 'harassed optimists'	2	7	2	11
Cluster G 'contented planners'	7	3	4	14
Cluster H 'fatalists'	1		1	2
Total	10	10	7	27

Note 1 : Although thirty respondents completed the TQ, three of these submitted spoiled I-E scale questionnaires.

APPENDIX 7.8STRATEGIES EMPLOYED BY INDIVIDUALS IN OVERCOMING OBSTACLES

Name	Number of strategies classified as:				Total
	Response	Corrective action	Planning action	Communication	
Mr. Dennis	1	1	2	1	5
Mr. East	1		3	5	9
Mr. Gamage	2	6	6	1	15
Mr. Gregory		2	3	4	9
Mr. Holt		1	1		2
Ms. Jenkins		3	2		5
Ms. Lever	1	1	4	4	10
Mr. Meadows	3	4	2	3	12
Mr. Neaverson	1	6	1	1	9
Mr. Pick	1	4	1	6	12
Ms. Potter		2	5	4	11
Mrs. Raynor		4	5	3	12
Ms. Stanford		5	5	2	12
Ms. Summers		4			4
Mr. Williams	1	4	3	5	13